

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE: FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Original Correspondence.

FOREIGN MINING AND METALLURGY.

profits realised during its last financial year by the Luxembourg Furnaces Company admit of the payment of a dividend at the rate of 10 per cent. per annum. This dividend absorbs 12,000*l.*, and is proposed to carry 28,94*l.* to the reserve fund. The results of the year would have been more satisfactory but for a combination of unfortunate circumstances, the most grievous of which was the sudden rise in the price of combustible. The quality of the coal supplied to the company last year was also very bad. The company has obtained three concessions of minerals in Lorraine, representing together an area of something over 400 acres. These concessions were obtained gratuitously, and they only figure in the balance-sheet for 620*l.* for expenses of surveys and working. Copper has been very quiet at Paris, and business has been transacted on a restricted scale. Chilean bars, delivered at Havre, has made 110*l.* in ingots, 94*l.*; tough English, 96*l.*; and Corocoro minerals, copper, 93*l.* per ton. At Havre copper has continued very quiet, and prices have been almost nominal. The Marseilles copper market continued quiet and without change; Spanish in plates has made 100*l.* per ton. In Germany transactions in copper have been quiet, and have been confined to the requirements of consumption; purchasers have only bought when they have been compelled to do so. There has been a tolerable amount of firmness in copper at Paris, and transactions have not been very important. Banca, delivered at Havre or Paris, has brought 130*l.*; Straits ditto, 130*l.*; and English, 129*l.* per ton. At Marseilles tin, after experiencing a rather important fall, has regained firmness; Banca is quoted at 134*l.* per ton. In Holland there has been considerable activity in tin, and prices have been tending downwards. At Amsterdam, Banca has been offered at 72*l.* without purchasers. The Rotterdam market, after having displayed a tendency, has closed quietly; Banca has ranged from 72*l.* to 73*l.*, and from 73*l.* to 73*l.*, with delivery at the early sale. Billiton has been quoted at 79*l.* to 73*l.*. A quietness has prevailed upon the German tin markets, and prices have materially varied. Lead has been firm at Paris; French, delivered at Paris, has made 24*l.* per ton. Lead has been advancing at London, and the German lead markets have all exhibited firmness. Zinc has presented little change. The number of ironworks which are in an idle condition is considerable in France, and the reaction is making itself felt in the French districts. Stocks of industrial coal are being formed, and the general tendency appears to be seriously downwards. In the Nord consumers have supplied their requirements for the winter, very few among them have shown a desire to make purchases, deliveries extending beyond next February, a date which they do not think will certainly bring with it a reduction in prices. Proprietors of some collieries propose contracts to be executed at 1*l.* 8*l.*, and even 2*l.* 6*l.* per ton below present rates. At the domestic coal trade has experienced a check; at the La pelle depot, and at the Aubervilliers general warehouses, there important stocks, and lower rates are reported than last month. The Carmaux Mines Company commenced the payment, on the 1st of an interim dividend at the rate of 1*l.* 4*l.* per share for the year 1873.

The extinction of no more furnaces is noted in France, but that it can be said. Retail traders and railway companies require so inexorably that whatever may be the financial and political situation of the country they must have it. This is what has now happened, and this has given a certain temporary animation to the tin, so that quotations for iron present rather more firmness, great rail works have some important orders to execute for the railway companies. Upon the Paris market the state of the tin has presented no variation; a revival in business has been retarded by the course of political events, which has, naturally, led some uneasiness.

marked slackening is noted in the demand for coal in Belgium. considerable quantities are being warehoused. A fresh revival of demand is anticipated on the advent of the first frosts, but while stocks are being formed, and colliery proprietors are finding it advisable to attract clients by making some concessions, especially as regards long-term contracts. There seems to be a little confidence as regards the future; on the contrary, there is an impression that the present feverish state of affairs is drawing to a close. Arrivals of English and German coal into Belgium come to take place with activity. The quality of the Belgian coal is at present supplied is complained of in some instances, although it ought to be good, considering the price charged for it. series of coal by navigations have been increasing recently; this is attributed partly to a want of trucks, but hitherto it cannot be said that trucks have made default to much extent. At Charleroi Mons quotations have been supported at about their former level. In the Liège basin there are said to be scarcely any stocks of coal, and all the great colliery proprietors have their production engaged from the present date until March, 1874. A fall, however, is anticipated in prices next spring, in consequence of the war in the iron trade. Quotations would, probably, give way at but for the diminution which has taken place in the extraordinary attention being temporarily directed to preparatory works. The Charleroi United Collieries Company has been paying a dividend of 4*l.* per share.

The slight return to animation which has characterised the English tin trade does not appear to have found any appreciable sales in tin; at any rate, no sensible revival has taken place in affairs, only meets with a sluggish sale, and the blast-furnaces which remained in activity find their stocks increasing, notwithstanding the general decrease which has taken place in the production. Several new establishments having blown out some of their furnaces. Refining pig, hard iron, is quoted at 4*l.* to 4*l.* 8*l.*; some transactions which have taken place in casting pig have been made at prices ranging between 5*l.* 12*l.* and 6*l.* per ton. The tin of merchants' iron is not much better, quotations have declined 10*l.* 8*l.* per ton, but purchasers do not present themselves upon terms, and some works which have done business at 10*l.* per ton have not been able by this useless sacrifice to create a regular flow of affairs. Rails have been in a little more demand, the

works do not accept present rates very readily, except as regards important transactions. A revival in affairs is looked for, and perhaps not without reason. The enquiry for plates has been more active, although prices have fallen. The foreign demand for Belgian iron is very feeble for the present; both Germany and France are taking very little, and no serious revival in the external demand is likely to be witnessed until coal has fallen. The Association of Engineers, educated at the Liège School, has held its annual general meeting this week at Brussels, under the presidency of M. Trasenster. The Gilly Forges Ironworks and Foundries Company will pay a dividend of 2*l.* per share for 1872-3 on Dec. 31.

MINING IN UTAH—THE EMMA MINE.

SIR,—In the Journal of Sept. 27 a certain Mr. Paffard, some sort of a clerk I believe, and the *soci* *distant* historian of the Emma Mine, takes exception to my remarks regarding the Emma and Flagstaff Mines in my communication upon the Cottonwoods, and insinuates that I have asserted what I cannot substantiate, and that I am not qualified to give an unbiased opinion on the matter. It is generally against my principles to take notice of any indirect attacks upon my professional character or qualifications. Mr. Paffard acknowledges that he speaks from hearsay only; if he had spoken from personal knowledge I might have deigned to notice his remarks, as it is I really cannot condescend to answer them. And should I repeat all that I am told of Mr. Paffard's qualifications for giving an opinion upon the subject I should be obliged to employ much stronger language than I care about using in regard to a perfect stranger to myself. As for the opinion of "one of our most experienced mining engineers," I will give it the same consideration that I do Mr. Paffard's, until he gives his name, and upon what knowledge he bases that opinion. If personal, I might condescend to reply; if only hearsay, I treat it as it deserves.

I am not in the habit of giving "authority" for, or corroboratory evidence of, the statements contained in my correspondence, as they are based upon personal observation, or gathered from the most authentic sources, and I alone am responsible for them. But I will deviate for once from my established rule, not for the satisfaction of Mr. Paffard, nor to attempt to convince the shareholders of the Emma that the opinion of a person who is totally ignorant of the subject is superior to that of an experienced professional who is on the spot, and who has every facility for obtaining the most reliable information, independent of his personal knowledge, but simply to show that Mr. Paffard writes upon a matter of which he absolutely knows nothing. In fact, his ignorance is so palpable that his communication is barely worthy of notice. One instance of his ignorance will suffice. In the opening sentence of his pamphlet he says the Emma Mine is situated in Little Cottonwood Canyon, &c., "about 16 miles from the branch of the Union Pacific Railroad, a station called Sandy being the nearest to the mine." In the first place, there are no "branch roads" on the Union Pacific Railroad; and secondly, Cottonwood is some 65 miles from the nearest point on this road, the junction of the Union and Central Pacific Railroad being Ogden, 42 miles from Salt Lake City. This is a specimen of his statements. The other statement contained in the same paragraph in regard to the naming of the mine is entirely beneath the notice of any gentleman. Is it a wonder that nobody comes forward to disprove any assertion contained in this pamphlet. Verily, let it sink back into the obscurity from which it emanated. I again assert that there is no good reason for presuming that the real value of these two mines has depreciated in the least. By this I do not mean that the mines are absolutely worth the amount of cash capital for which they are stocked, neither have I ever given an approximate value of either mine. I simply repeat what I asserted in that communication, that facts lately ascertained warranted the belief that the Emma is as valuable as it ever was, and to say that it never was of any value is a piece of presumption that cannot be sustained by past experience. I also repeat that it is an absurd rumour that the Emma was virtually worked out when placed upon the London market, notwithstanding the specific statement of Mr. W. Eddy, jun., to the contrary. Mr. Eddy was only a common miner, employed by the day, and who was neither a geologist nor a mining expert. And as regards this statement I have only to ask what value could be placed upon the opinion of any man who "knew that the mine was worked out," and yet who could keep silence for two years and permit his countrymen to pay such an enormous sum for a worthless property? It is obvious what his specific statement is worth.

From official statistics which do not come under the observation of Mr. Paffard, I find that the Emma has shipped on an average about 130 tons of ore weekly during the past season, some of it being of a very high grade, assaying in silver over \$2000 per ton. At the very lowest average \$100 per ton, this would be \$13,000 per week. Any mine yielding this amount even in the gross, which is a very low calculation, cannot by any means be said to be played out. Mr. Paffard does not controvert my statement that the mine yielded \$1,000,000 worth of ore in the year 1872, and admits that it has been in possession of the present company during that time. I need not make any further comment upon the consistency of his remarks as regard the mine being "played out." And if Mr. Paffard has not yet learned to judge by the law of comparison he had better abandon the rudiments of Latin, and study practical life.

Mr. Paffard allows that there has been 50,000*l.* profit out of the Emma, "leaving out the Illinois Tunnel," during the past 20 months, but gives this as a proof that the mine is not what it was represented to be. Represented to be by whom? Anyone who had not read my articles would think that I had represented the mine to be worth the capital of 1,000,000*l.*, or some other enormous sum. If I wished to engage in a controversy with Mr. Paffard I would request him to prove this; as it is, I simply give his insinuation the lie direct. I agree with Mr. Paffard that 50,000*l.* profit in 20 months is not very large for a capital of 1,000,000*l.*; and in this connection I will again repeat what I have so frequently stated in my correspondence, that it is not any evidence that the mine is worthless if it cannot pay a dividend on a sum perhaps five times its real value. If English capitalists will persist in stocking mines in this reckless and absurd manner they must not complain at not receiving a large or even a moderate dividend. Taking Mr. Paffard's estimate of 30,000*l.* in 20 months, with the Illinois Tunnel paid for, this would be 1½ per cent. per month, which is a good profit on a capital of

100,000*l.*, and this is a fair price to pay for any ordinary mine. The Emma produced 200,000*l.* worth of ore in 1872, and if a company cannot make a good profit out of this amount it is evident that there must be some fault in the management. And as I have frequently stated before, when a company prosecutes labour without either economy or foresight, but are extravagant or reckless in expenditure, large profits need not be expected, for they will not be obtained. And if Mr. Paffard has again a "little money to spare," I would advise him to purchase one or two shares in a company that is not so heavily stocked, or he will be obliged to make a second endeavour to retrieve his fallen fortunes by writing another pamphlet. But I will here inform Mr. Paffard and the British public generally that it is perfectly understood on this side what has been the object of bearing the shares of the Emma, and that in this connection Mr. Paffard has placed himself in no enviable position. It looks very much as if Mr. Paffard had some other object in view than merely to try and get redress for the loss of the paltry sum which he originally invested, and people here who have read his pamphlet do not hesitate to say that it was written with some ulterior motive, and they wonder how many shares Mr. Paffard has been promised for his services when certain "clever" parties obtain control of the majority of the shares. It will not be very long before developments will take place which will astonish the former shareholders of the Emma, and make them regret that they were weak enough to be influenced by parties having the same object in view as Mr. Paffard. I have before written upon this subject of "bearing" stock, and the motives for so doing, and have warned the British public not to be misled by unscrupulous speculators who were acting in defiance of all business honour and rectitude. A subsequent communication may contain more upon this subject.

In conclusion, I will state that I have neither time nor inclination to enter into any controversy with Mr. Paffard. I have not the slightest interest in the mine, and I have had no other object than to give the English public reliable information, and make them familiar with facts as they exist here in regard to mining matters in general, and that from an impartial stand-point. And in a long course of professional experience I have always found the best rule to be the code of honour, consequently I decline entering into any argument with a person who has not the slightest knowledge of what he presumes to criticise. According to Mr. Paffard's own avowal in his pamphlet other gentlemen permit him to write six letters without any notice being taken of his communications, henceforth I shall permit him to do the same.

B. A. M. FROISSET, U. S. Surveys.

Salt Lake City, Utah, Oct. 15.

COPPER MINING ON LAKE SUPERIOR.

SIR,—Mining in Houghton and Keweenaw counties is very lively, and in many instances profitable. Huron Mine, which went down in a very large indebtedness some four or five years ago, was taken hold of by its creditors. Most of them are practical men, and by great economy and good judgment the concern is now doing well, under the name of the Houghton Mining Company, working some 300 men. About the same state of affairs applies to the South Pewabic, now the Atlantic. They have three heads of Ball's stamps, which, if properly attended to, will stamp 100 tons each in 24 hours. Their product is now about 90 tons, of 75 per cent. of mineral, a month. Quincy Mine keeps up 120 to 130 tons a month, and paying regular dividends. Pewabic and Franklin are leased to a Capt. R. Uren, to work on shares or tribute, and by prudent management he is making a little fortune pretty fast.

Boston and Albany is working for the fifth time. When copper was low they could not make it pay, but now I presume it will answer. Generally copper here is 19 to 21 cents, but now it stands from 25 to 26 cents. Calumet and Hecla Consolidated borders on 1100 tons a month, of 83 per cent., dry weight, and looking if possible better than ever; it is down about 1200 feet from surface. Immediately south, on same lode, is a mine started with excellent appearances, and great excitement is on foot. Great expectations are entertained that it will be Calumet and Hecla No. 2. Immediately north, and on same lode, is the Schoolcraft, and notwithstanding the company has furnished everything that is considered necessary, and have opened 600 feet in depth and 1100 or 1200 feet in length, under the able management of Capt. Johnson Vivian, formerly of Camborne. It has failed to come up to a paying point. They are, however, still trying, and I believe they are about to sink another lift anyhow. Attempts have been made to foster the idea that there is room to censure the management. This, you know, is often the case when a mine does not yield to expectations, but this company are practical men, who well know they have a practical man at the helm, fully able for his post. The Old Cliff is looking remarkably well. In the back of the 137 fm. level they have one of the old-fashioned masses, from 75 to 100 tons, and other points are looking exceedingly well.—Oct. 15. A MINER.

ROCK-BORING MACHINES.

SIR,—Allow me to thank Sir George William Denys for his frank, manly, and courteous letter which appeared in last week's Journal. In reply to his former paper, I examined his statements respecting the quantity of work done by his McKean Boring Machine. He has been good enough to furnish us with additional data, from which we may again compare the results arrived at by machine labour and hand labour. I will this time examine the latter, when we shall be able, to some extent, to estimate the value of both as advanced by him. We cannot know the weight of what is placed in a scale until we know the weights which are placed to balance it in the opposite scale.

Sir George William Denys says that they have at present a forehead going in an adjoining mine to the one in which the forehead is being driven by the McKean drill. From the fact that this hand-labour forehead is said to be in an adjoining mine, and that the machine-labour forehead is said to be a much worse place to drive, I shall assume that the hand-labour forehead is in similar strata to that found in the machine-labour forehead, and consequently that the same amount of boring and blasting in the hand-labour forehead would accomplish as much work as if done in the machine-labour forehead. The fact of its having been let for 2*l.* per fathom cheaper than the price named for hand labour in the machine-labour fore-

head also tells a little in favour of this assumption. It is said that 48 ft. of boring will cut 1 fm., or 6 ft. of ground, so that to cut 7 ft. of ground it will take 56 ft. of boring, which is the total amount of boring done by these four men in a month, and which is equal to 14 ft. of boring done in the month by one man. Dividing this by four we find that the distance bored by one man in a week is 42 in., or 7 in. per day. Besides this boring, these men would have to remove the broken rock. To get at the quantity of this it will be necessary to take the size of the forehead. It is said to be from 4 to 5 ft. wide. I will take it to be 4½ ft. wide, 7 ft. high; and, as the distance driven during the month was 7 ft., the whole cubical contents of the forehead will be 220.5 cubic feet. Let me give it in weight instead, which will make it plainer, as many of us are more conversant with weight than cubical capacity. I do not know the specific gravity of the rock in which this forehead is driven, but I will assume it at 2.6, which is assuredly not under the mark. This will give the total weight of the whole quantity of stuff shifted to be nearly 16 tons, or nearly 1 ton for each man per week, and is also equal to a little more than 3 cwt. per man per day, so that the whole quantity of work done by these four men in this forehead amounts for each man per day to this—to remove about 3 cwt. of broken rock, and to bore a depth of 7 in. If it be true that those who do not work should not eat, the wages earned by these men for this work is quite as much as the work is worth, and more than they deserve to get. Mechanical engineers, with whom Sir George Wm. Denys is probably better acquainted than with miners, cannot deny but that were this forehead, instead of being driven in a griststone, being driven in solid cast-iron, one man could drill nearly, if not quite, double the distance in the same time that one man does in this forehead. It appears to be unnecessary to add anything further respecting the data furnished by Sir George William Denys. It may not be improper to say, however, that I am not aware that I have said that we bore 90 ft. per diem, nor can I agree with him that all engineers are ignorant of how bore-holes should be put in to get good results in blasting. The engineer of whom he spoke was not a fair sample of the mining engineers of the present day. It is, nevertheless, true that hole-boring, accompanied as it formerly was with very little except hard manual labour, did not receive so much attention as it does at present with the numerous labour-saving appliances in use; and it is also unfortunately true that there are numerous engineers of the kind whose description who are unacquainted with the ordinary practice of blasting by the old method of hand bore-holes and old blasting-powder. What can be expected when engineers of this kind are put in charge of rock-boring machinery, or anything else that is intended to supersede an established system, but that, when the new machinery, or some part of the new system is found fault with, owing to some preconceived notion of the men, or mayhap to a prejudice of theirs against its use, it should fall to the ground. Your peacock engineer, under these circumstances, unable from sheer ignorance of the necessary knowledge to combat and overcome the objections of the men, who are generally able to point out clearly enough the particular part of the "new fangled thing" that "does not act," is constrained to submit to one of the only courses now left open to him—either to abandon the "new fangled thing" at once, which would, probably, in many cases be the wiser course, or allow it to be worked in the only way available by the men.

It may not be out of place for me to say something on the length of the Burleigh drill, which Mr. Wasley says is an important objection to its use for sinking, &c. I do not know what &c. may mean, and cannot, in consequence, judge respecting the force of the objection in reference thereto, but as I do know something of the use of the Burleigh for shaft sinking I will give some of the results of my experience on the subject, although it may be probable that this ought not to receive so much attention as what Mr. Wasley has said owing to the fact which he stated, that he had used the Burleigh before we did. "Unskilful workmen often blame their tools," is an old saying, which was proved true in our case, when we began to use the Burleigh for sinking. We found, as Mr. Wasley had found before, that it was too long to bore holes to lift sufficiently according to the established principles of blasting and of putting in bore-holes. This being the case, we shortened the Burleigh by lowering the top bow, through which the feed-screw works, and at first we congratulated ourselves on the great improvement that we had made in our machine. I am aware that several will be ready to come forward at once with an exclamation that this alteration is so obvious that anyone cannot avoid stumbling across it who is really interested in making the best use of the tools that are placed in his hands. I must add, however, what may not be so obvious at first sight, that after a little experience in using the whole system on which my paper was written that the Burleigh as made new was not too long for shaft sinking when used in connection with the other branches of Brain's System, and that after learning to work the whole system there is no necessity to alter the drill by shortening it. I hope I may be excused for reminding those engineers who do not at once arrive at good results with boring machinery of a tale told by Warburton of a man who found fault with all the reading-glasses in the shop, the fact being that he had never learnt to read. To those users of the Burleigh who may think that shortening will be an improvement, it will be apparent from measuring it that it can in this manner by any ordinary blacksmith be made still shorter than ours is, which is now 3 ft. 8 in. long from outside to outside.

I am somewhat afraid that from the way in which this "discussion," which arose out of the publishing of my paper on Brain's New System of Mining (in the *Mining Journal* of Sept. 20), that I may be taken for an advocate of the Burleigh drill as against other drills. This is not true. I am not an advocate of the Burleigh, nor do I wish to make one disparaging remark about any other drill. I am in no way interested in lifting up the Burleigh or in pulling down any other boring machine. What I said was to indicate the results achieved by Brain's New System of Mining, in which the Burleigh drill was used, not necessarily because it was the Burleigh, but merely because it was at that time considered to be the best rock-borer for general mining work. That this is not yet contrary to the general opinion appears to be evident from the fact that no one attempts to prove that the Burleigh is not a good boring machine. Doubtless, like all other human contrivances, it can be improved upon, and, to descend to particulars, there is great credit due to Messrs. C. Ball and Company for their persevering attempts in this direction. It is to be hoped that their continued attempts will ultimately be crowned with success. It must, however, be admitted that to an impartial observer who is not conversant with the improvements which they are trying to effect they are labouring under a disadvantage. It appears to induce a suspicion that since they left the Burleigh they are, if I may use the expression, advancing backwards—that they are liable to make a practical illustration of the old maxim "that it is easier to alter than to improve." Their new drill undoubtedly possesses many important advantages over the old ones, not the least of which is that of using the same chisel to bore the hole the whole depth. This is a valuable property, especially for sinking good-sized shafts; for driving small headings I fear, however, that, as the machine cannot be shorter than the depth of the hole, its length will be an objection.

So far as I am concerned, I wish to say that since this "discussion" is considered to be merely on the merits of the several boring machines I shall leave it to those interested, and I must, after this, decline to say anything further on the subject. Accept thanks for the space accorded me.—*Drybrook, Nov. 4.* S. DAVIES.

FIRE-PROOF BUILDINGS.

SIR.—Referring to Mr. Walker's letter in the *Journal* of Oct. 18, respecting his method of rendering buildings fire-proof, and observing its great simplicity, I have fully and carefully investigated his plan, and should be glad to see it generally adopted; for I am of opinion that in most cases where a fire occurred in a bed or sitting-room the destruction would be confined to such room; or when, from the character of the contents of the room, the fire became so fierce as to destroy all before it, if let alone Mr. Walker's arrangements would give ample time for the arrival of the requisite assistance to arrest the progress of the fire, and that, therefore, any ex-

tensive conflagration, even in the densest districts, would become an impossibility.

For the information of those who may not have an opportunity of investigating this method of construction, permit me to say that it retains all the present comforts of plaster ceilings and boarded floors, when desired; but it requires only one-eighth the quantity of timber now used to form the beams, joists, rafters, &c., and that is so closely packed with iron plating, and with tiles and concrete, that a free fire cannot obtain for want of the requisite supply of oxygen to support combustion; hence a fire commencing in a room must either die out there, or the progress thereof be so long delayed that the requisite assistance would have ample time to reach the spot and extinguish the fire.

I have not gone fully into the question of the cost of a building by Mr. Walker's method relatively with the present one, but there does not appear to be any reason to apprehend much difference, whether more or less; certainly nothing deserving serious consideration, bearing in mind the comfort which certainly against being burnt out by our servants' or neighbours' carelessness gives.

London, Oct. 30.

A CIVIL ENGINEER.

MINERS' CONVERSATIONS—No. III.

Bill.—A short time ago I heard that a London broker said to his friend "I would not for any consideration let my son know all my doings." What does that mean but that his transactions would not bear exposure even to one of his own family?

John.—Did you ever hear of a religious broker?

Bill.—You may just as well expect religion in the "Old Gentleman" (1) as in a broker. Religion is based on honesty and love. Now, a man who has love towards his brother or friend will not cheat him, or take any unfair advantage of his ignorance of business; but some brokers are always doing that—or at every opportunity. One of their schemes for taking advantage of the incautious is this: They agree to bid on one another for shares, and raise the price to an unnatural pitch, which the condition of the mine does not warrant; but strangers and the uninitiated in their arts do not know that; they look upon the offers made and the pretended sales as real, whereas many of them are fictitious. Tabbs's Coffee Room had in this way been made a den of thieves.

John.—I heard of an instance of the kind you mention a few months ago. A mining agent from the West was induced to buy five or six shares in West Tolgus at about 80s. or 90s. each, when they were really worth only about 20s. He sold them afterwards at about that price, thereby losing several hundreds of pounds.

Bill.—Brokers profess to be very disinterested in advising what they call their clients, telling them what to buy, and what to sell; but the advice comes out of a selfish spirit. Their deceptions have been in many cases exposed in the *Mining Journal*, which Capt. J. lends me every week; but they are constantly getting fresh dupes.

John.—One of the greatest frauds—for it was of the nature of a fraud, if not legally so—was that respecting five lead mines in Wales, which were brought out at 191,000s., 167,000s., of which went into the pockets of the promoters—mine brokers.

Bill.—I have been told by Capt. J., who has been in London a score times, that most of the mine brokers live in splendid style, keeping large houses, richly furnished, numerous servants, well stored cellars, and every luxury; but some of them get into the Bankruptcy Court, even several times, and pay nothing in the pound. They appear to have no more conscience than a stone. Sometimes their dishonesty is exposed in the Lord Mayor's Court in London, and followed with punishment. However, some brokers, while they go as near as possible to the line between legal and illegal wickedness, take care to keep within it. A book exposing all their iniquities would be a large volume.

John.—I suppose you admit that there are some honest brokers? Bill.—Most certainly there are; among others I am told by Capt. J.—that Messrs. Watson Brothers and Mr. H. B. Rye are honest brokers.

John.—We mentioned lawyers just now. What makes them so detested in the country is their extortion. They charge not only for what they do but for what they say, and for looking at a client. The making a charge of 6s. 8d. for a minute's attendance is disgraceful. I know a gentleman who owed a few pounds in London. The creditor wrote him for the amount through a London attorney. The creditor said, in reply, "I shall be in London in a few days, and will call and pay." Immediately afterwards down came a writ, with a charge of 2s. 12s. 6d. for it, which by the time the creditor reached London was increased to 3s. 3s. On his arrival he called on the lawyer, merely to say "I will call on you to-morrow and pay the amount." He did so, and took a receipt, when the lawyer asked for an item of information relative to the matter, which the creditor supplied on the following morning. Afterwards the following charges were made. "Attending you when you promised to call and pay the amount due, 6s. 8d. Attending you, receiving same, and giving receipt, 6s. 8d. Attending you further hereon, 6s. 8d. Total, 12s." Capt. J.—knew those facts.

Bill.—I am glad to say that I have no connection with lawyers. John.—The less the better.

Bill.—Now that we are speaking of lawyers, what do you think of the lawyer who was employed by Mr. Vivian, of Camborne, who was sued by Mr. Cartwright for a libel never committed?

John.—I know all about that. At the Assizes in Bodmin the lawyer you refer to instructed his counsel to apologise for Mr. Vivian without his authority, previous knowledge, or will, for in the public papers Mr. Vivian said afterwards that there were no grounds for an apology, as no libel had been committed. The lawyer deserves great censure for his presumption, and might be "brought to book" for it, as people say.

Bill.—Lawyer's are too apt to fall into one another's hands. They would rather favour one another than their clients. I know, however, some honest ones. The London lawyers, generally, are the sharps.—*St. Just, Nov. 4.* AGENT.

PRACTICAL MINING—SUGGESTIONS TO AGENTS—No. III.

N. ENNOR'S REMARKS ON WHAT MINES TO WORK, AND HOW TO WORK THEM.

SIR.—First get a promising sett, or grant; then cut one or more trench across, as may be required. If it is a long east and west sett it should have two north and south cuttings; if the greatest length is north and south one cutting might do. Then, one cutting east and west would mostly be sufficient. If these are well planned they would cut every lode that runs east, and every counter and north and south lode and change of strata in the sett. After the east and west lode is cut pit it out for all its length, about 10 fms. apart, and find every gossan outcrop on every east and west lode and counter. Pay particular attention to them near intersections. After this is done lay them down correctly on paper, as mineral guides to be handed to the lords. In fact, they should pay all the expense—at any rate, the half—if handed over to them. These would be the most valuable things the lords could keep, next to their deeds of estate, if in mineral ground. Then, what is the cost of such work, as a proof of what promising lodes are in the land, and where the intersections are, and where the good points are? But few grants would cost 200s. to prove them. Then, what a valuable thing to know all the lodes, cross lodes, and elvans you have in your land. Proof in any other way often costs thousands of pounds. I never saw a tin, lead, blende, or antimony lode of value but would show ore at the surface. I have seen few copper lodes that did not show copper or a copper gossan throughout to the surface. I do not believe there is a sett half-a-mile square in any mining district in the county but has lodes in it yet unknown; when found they have had long adits driven through them. It is seldom I go in to see a sett but I hear of some new lode found by accident. When a sett is properly opened up every lode is known, and every gossan outcrop, and in many cases even the ore is found. If you know of every lode and junction, then you know where to sink the shaft so as to meet the junction, and mostly the ore.

After these cuttings are made you go to work systematically, and pitch your engine-shafts to meet the junction, and sink them (say) 30 fms. Then throw out levels each way, till you reach every junction or outcrop of gossan. Then shift the shaft, if need be, in the right

place. Two shafts are needed, one for an air-shaft. If a lode is found, sink a new engine-shaft on it, as every mine should have two shafts. If nothing is found at a depth of 30 fms. sink a new shaft, and take a new grant, and work it in the same way. When the lodes are laid open a man may fairly say—there is a large gossan no paying ore, that is on a lode that contains ore—produce a gossan. I have often seen paying ore on the back of a lode at surface with but little gossan, but they are seldom golden fleece under it. I say, where there is a large gossan lode, a trace of sulphur-mundie. A grey gossan is a blacker iron gossan. Lead often carries a dark iron gossan. Zinc, black jack, is the same as a lead gossan. Sulphur and iron often combine to form a gossan; it will throw up a light gossan. A bed of iron and iron that forms mundie will throw up a dark-red gossan. These are all ores that will pay if shallow. Where the gossan lodes, as it is at these points many substances meet, and they are bringing in the one thing needful.

I am not here asking any man how gossan is formed; I am giving my own opinion as to its formation. I contend that gossan is formed by polar and molecular motion of atoms, propelled by electricity through lodes and layers. The atoms are ever moving, rocks or layers are still; all substances are either growing or decaying. The decaying portion moves on till it is arrested by something it has a strong affinity for, when it sticks fast, and sticks to it, till it becomes a body. When it is forming it is by many acids, that are making way for it by dissolving the rocks and motion carries it on and makes more room, and particularly the country rocks. These dissolve and pass upwards; all the natural tendency to pass upwards. Even silica is ever forming a matrix of the lode. Alumina, the dross of sulphur, and every substance forming pass up with it, even to the surface, and these substances themselves will dissolve the country rock, and make room for themselves. They are the chimneys for the gossan, and a deal of the lighter portions pass even to the air. These gossans are only to be compared to the soot of coals forming in a chimney. Silver, and various light ores, go up with it; but it is of notice that every deposit of ore and gossan causes the sides of the lode to swell out and enlarge by decomposing. On nearly all the lodes we see a soft clay side; I say that contains the acid that dissolves the hard rock to make room for lodes, and for ores to deposit. When they get old the soft side hardens and dries to a lode. These soft sides are mostly to be seen in coal beds, and often called decaying coal, when it is only the acid decaying the earth to make room for the coal bed to enlarge. These runs in the lode are black; the acid runs in lodes are white or blue. Then, what are our nation-paid chemists? When will they tell what these are composed of, and if electricity is not the acting agent? They prove that silica is not an acid, and is not present in the composing substance? I know that sulphur and arsenic are present. I can say more—mica is ever present, often in scales, and the whole substance appears of a greasy nature, and dissolving acid. I believe it capable of dissolving any known rock, and opening the way to growing any sized lode that has ore in its background requiring room to deposit. I say how unkind these theoreticals, and more so our paid chemists, to let our illiterate hard-working miner labour for the last 50 years, and never get out a leaf from their books and shown it him when about to sink the earth, amidst its wonderful works. The miner, if he reads the *Mining Journal* of Oct. 25, will there see the result of the Penryn meeting—the waste of time there to show the new plan of explaining shells that amounted to little or nothing, things that might be said not to concern Cornwall or its people, as there is a fossil bed in the county. What are the fossils of Cornwall? pay anything to the landowner? I am not aware that they pay a single penny from them. Many of the landowners were in attendance, and had more the appearance of having run mad after fossils than mines. They should have pulled a leaf out of the chemistry book, and handed it to the benighted miner, to guide him in his searches through the earth, from which they annually pocket thousands. It might have aided them little, as they have only an annual meeting to discuss Cornish mining; and to waste that time on paltry fossils was reprehensible. Besides, fossils are no guide to the Cornish miner, as fossil layers are all above the earth's mineral-growing layer; but little grows over them except lead, iron, and zinc, and they are out of place; these are only produced from the seed carried up from the lead-bearing layer below the time formation. Neither the lead nor the iron were there when the shells and their contents, now fossils, existed. The majority of the deposit ore is not even in veins, neither are shells found in the recently formed lead. On this subject I gain a point: here is proof that the ores have grown since the fish died. Mr. Taylor mined the fossil lime rock 40 years, and did not discover that lead was in lime after the fish lived, till a Yankee bit his finger. I will say no more on this subject at present, but will return to it on a future day.

I now return to Cornish mining, and tell the mine captain that for the last 30 years they have carried out Cornish mining without having laid down any law or system, further than to sink a new engine-shaft at haphazard. It was done without any law or guide. They often sunk over 100 fms. in a hole with only a single lode at it being opened on. In some places they drove a few fathoms, and in others not. I said before that they at most proved only 30 or 60 fms. of a sett. If we suppose the sett to be half a mile long they had opened only about one-eighth of it, and for what they knew it was only in barren ground. It is proved that only one-fortieth of all the mines in the county opened by them in the last 30 years have been paying ones. The badly worked mines over-balance the well wrought ones. It is clear that we must mine on a new system or abandon mining until some future day. I am quite aware that I have long since obtained a name for writing bad reports, but I look my standard to start with that about one in ten paid, but I find they will not even bear that: still I am not required by anyone to prove that a single mine I have so reported on has turned up a success. But this might have happened otherwise, as I find very few grants in the county that are fairly proved, with all the land opened up. I may notice that when I am required to report on a lode, it is only these I see. The mines generally are laid open in such a way that no one knows where a cross lode or counter may fall in. I found Trebargett Mine by pitting 200 fms. east of the former mine, and paid dividends nearly all the time it was worked, and left it paying cost.

I have recently returned from near Redruth and St. Agnes districts, and I was taken by surprise when I went over a sett, not more than one-quarter of which had been scratched over; it is in most productive district, but has never been half laid open. I went a mile to see a large elvan course, and when I saw it I was surprised to find it a large quartz lode, full of mundie, and never had a pit sunk on it, when the lodes right and left have returned thousands of tons of copper, and every lode in the grant is known to be skirted by the most productive cross lode in the county, and never a lode opened on against it. After seeing this, I venture to say there are thousands of places, even in the midst of the mining district, yet unopened. I do not despair of Cornish mining; it will do yet; but I do condemn the system of working. I may notice there are hundreds of new setts to be had that are, I may fairly say, only scratched over. As a proof of how mining has been carried on, I ask a few questions of some who are thought to be great mining authorities. First, I ask how many captains are to be found in the two counties who have discovered and opened a mine that has paid outlay and the interest of money through life? These, surely, are few and far between. I will take Devon first, where I know of but one living—Mr. Hitchins; he, certainly, may be set down for finding one, and I think the only one in Devon. Then comes Cornwall, and I say Capt. Pryor bids fair to be a second. He took in hand an old mine, which had been worked for about 300 years in search of copper, and found it was a good tin mine. I believe no man living ever knew the lode contained tin before, and he has been returning about 20 tons of ore per month. He is now get-

ting old Sheba in order, to work it for tin also. If he finds tin there, surely Capt. Jack will not put in a claim, as he had it in hand for about 20 years, and found no tin. Then, I know no one in all the Callington district that can put in a claim but the Doctor; I hear he thinks of putting in a claim as having opened more mines than any man in England; I am not aware he is about to enumerate the paying mines he found. I know of no other one in the Callington district. Then comes the Liskeard district; I know no one there. Then comes St. Austell district; there are one or two would-be experts in that district, who make a noise, and pretend to teach mining, but I never knew them to publish a single account of what they have lost on their mines. I venture to ask if it amounts to 100,000? Had they paid a small dividend on one the Journal would have been called on to publish it. I am not inclined to think St. Austell district will produce a claimant. Then we are brought down to the Redruth district—in fact, to Truro and Hayle—and how many men will put in a claim there I know not. I recently asked a man that I am on the best of terms with, and he stands at (he has been an agent a number of years, and has many mines now at work), if ever he found a mine that paid outlay and interest of money spent, when he expected to find one, and if he could find as many paying mine agents in Devon and Cornwall as he has fingers and thumbs that found such paying mines? I have not got his answer yet. In that case, it does not say much in favour of our more recent agents' system of deep sinking, neither does it for their knowledge of where to work to find a good mine; neither does it prove they are men that should be called in to report on mines, as I am confident that Mr. Williams found more paying mines than all the lot now living. I do not consider that men who have been agents in paying mines should be ranked as mine finders, as I have known many drones become agents of good mines. But these are only fit as reporters for such men as the lounge catches. A man who ventures largely in mines should learn to know a good gossan, and go and see for himself that the lodes are well laid open; then, if he knows a gossan, and can see a large mass—not a wheelbarrow full, but cartloads—he stands a fair chance for his money, even if he knows nothing else of mining but seeing the accounts are all correctly kept.

I next ask a few useful questions, that all mining men should be able to answer:—1. Which way do ores dip generally in a lode, east or west? They have but one general law of dip; the contrary shift is by other means. I might say from contra shifts of other courses, such as slides or floors. These shifts of lodes often throw the dip the wrong way, to all appearance, but they come right again.—2. Why are lodes most productive near junctions?—3. Is not the earth in constant motion through atoms passing on? Which way do they pass on? Is polarity the attraction, or does electricity pass them on, and give them the vital spark, as required?—4. Are electricity and atoms ever running the same way in lodes, or do they change, much as the tide ebbs and flows?—5. What is the acting acid that dissolves the lodes and rocks into atoms again, to be regenerated and newly formed?—6. What gas do large lodes fully charged with yellow copper produce? What among the substances take the most active part?—7. What gas will a lode produce when charged with silica, alumina, iron, mica, sulphur, arsenic, and lime? Who will name its then compound? Is it an explosive gas?—8. What should be the contents of the stratum and lode or lodes to produce heat in mines?—9. What to produce cold gas in a mine?—10. What gas is produced in a long deep granite level, with no lode in it? If any gas, is it hot or cold? We all know coals produce a hot explosive gas.—11. What three things that were formed at the Creation never propagate, and are self-healing and repairing?—12. What is the shortest lived thing that was created?—13. In what do clay-slate and granite differ?—14. In what do copper-bearing clay-slate and lead-bearing clay-slate differ? All worth knowing to the practical miner, and he must learn it if he would keep pace with the Cornish farmer.—*Wadebridge, Nov. 4.* — N. ENNOR.

PRACTICAL MINING—SUGGESTIONS TO MINE AGENTS.

SIR,—I have read with some interest the different articles written by Mr. Ennor purporting to give practical suggestions to mine agents, and after a careful perusal of them I have failed to perceive their value, but on the contrary consider them a gross insult to the mine agents of Devon and Cornwall. Indeed, it appears to me that the articles are written more for the purpose of "bullying" or "bearing" certain mines than to give any practical information. Last week Devon Great Consols was attacked, and this week, no doubt, it will be some other mine. Then, too, Mr. Ennor makes such absurd digressions about trees, plants, shrubs, and farming which make his articles quite a muddle. What these things have to do with practical mining, even for high-drawn illustration, I have yet to learn? Mr. Ennor refers to his past connection with Drake Walls, but did not at the same time say that this mine was so notoriously badly laid out that more men were killed in it than any other mine in Cornwall.

I would advise Mr. Ennor before he classifies all mine agents as fools (except himself) to let them know how many dividend-paying mines he has laid out, and how long they continued dividend-paying; and as egotism seems to be one of the gentleman's failings, if he has anything to say on this head I would listen to him to the "top of his bent"; and I have no doubt, should his explanations be satisfactory, that he will have many mine agents that will be more inclined to follow him than they are at present. At the same time he may also as well say how many non-dividend paying mines he has laid out. Why Mr. Ennor asks so many questions without supplying answers I cannot tell, unless for the sake of information; but I think it would suit his character of mentor better if he would supply the answers as well as the questions. But I much doubt if he or anyone else can answer them. Does Mr. Ennor want to puff Dolcoath or Tincroft, or is his object to have a side chop at Messrs. Taylor, who are greater mining authorities than Mr. Ennor ever can be? I should like to know what wages were paid at Drake Walls during the time Mr. Ennor had the mine, also the price of coal, and what state the mine was in when he left it? for it must be remembered that present profit is often made at the cost of future loss. Bad timbering and temporary work often take months to repair, and the man who follows a dividend-paying man often finds the mine in such a state as to require months of dead work to get it into working order.

Mr. Ennor would do more justice to mine agents and to mine speculators if he would tell them the reason why deep sinking does not pay, and point out the way to make it pay. I will, however, endeavour to do so.

REASONS WHY DEEP SINKING DOES NOT PAY.

1.—Excessive dues paid to the lord. In the two counties of Devon and Cornwall there are often more royalties paid to the lords than the shareholders get in dividends. It is no uncommon thing for a mine to be paying 100*l.* per acre land damage when the land for agricultural purposes is not worth more than 30*l.* freehold. Then there is 5*l.* or 10*l.* per acre yearly rental, and 1-16th or 1-20th dues. 2.—The high price of coal, machinery, and labour. These items have nearly doubled within a very few years. 3.—The amount of cash and shares that are paid to the brokers and directors. This money is very often paid before the mine is worked, and it often happens that a company with a very large nominal capital has not one-half sufficient cash to do what they propose, and what is stated in the prospectus. Then, the salaries paid the London management are often half as much as the mine cost. Then when the mine is knocked, as it must be, the brokers and secretary try and throw all the blame on the mine agents.

NOW FOR THE REMEDIES.

1.—To pay nothing to the lords but the actual freehold value of the land with no rental. To pay the dues on the profits. 2.—To reduce the expenditure on coal as much as possible, by substituting better boilers and better engines than are at present used in the two counties, and substitute machinery for hand-labour. The McKean or Burleigh Drill would in many cases considerably reduce this item. 3.—To use a higher kind of explosive agent, as guncotton, dynamite, or lithofractor. 4.—To be careful before investing in a mine to see that it is not weighted with a cash price beyond its value, as a mine is very often

ruined by being sold at too high a price, and the money so spent is taken away from being invested in tools, machinery, &c.

And now for a word in defence of the mine agents of Devon and Cornwall. I must again differ entirely from Mr. Ennor, for I think these men are second to none in the United Kingdom. I am only sorry that they have no better champion to defend them from the aspersions cast upon their ability and probity. I have myself associated greatly with them, and can confidently say that there are no men who know their duty better, and more constantly study the different improvements that apply to their business. As a body I believe them to be unimpeachable. I grant there are a few black sheep amongst them, and I should be glad to know in what body of men there are not. I do not think Mr. Ennor's opinion with regard to 100 fathoms being the maximum depth for a good tin lode will be endorsed by even a minority of Cornish miners; besides, it is well known that good tin lodes are found at greater depths than this, and as two periods are lost and part of the third, what in one place may be 100 fathoms may in another be 600 fathoms.

I should like to have more of Mr. Ennor's ideas concerning tin being formed from oxide. Will the gentleman tell me if he considers that rust was formed before iron? If Mr. Ennor will give his views without attacking special mines or men he would carry more weight with real miners, but as long as he selects individuals or individual mines to illustrate his old-world ideas people will know what importance to attach to his theories. I see also that this gentleman is going to find a nest of young mines in the county. Are they for the market? or is the great Philanthropist going to hand them over to a longing public?

I know some dozens of mines in the county, but am certain that neither he nor anyone else can tell what they are likely to be by surface scratching. Money must be spent on them, and some depth attained, before it can be told what they are like. The days of the diving rod are past, even in a county that contains only one diviner. *Devonshire, Nov. 4.* — A MINER.

PRACTICAL MINING—SUGGESTIONS TO AGENTS.

SIR,—A great many complain, through the columns of your valuable Journal, on the emigration of Devon and Cornish miners to foreign lands—leaving their mines short-handed, and in consequence a compulsion of higher wages to be paid. There is one plain course to be adopted, and, if adopted, would readily overcome that serious difficulty. A great many agents in Cornwall and Devon instead of doing the right thing seem to pay all their attention to how much each miner earns. Not a word about how much labour they perform. Each agent, in order to avoid higher wages being paid to his men than is paid in any other mine, will let as many as three or four contracts to each party of miners in one month, by giving out (say) 3 feet and in some cases 6 feet stent at a time, thereby dealing out to the very penny almost in a month how much each man shall have. And what is the result? why, at the least, it requires three men to perform what two men ought to do. To overcome this, let long contracts, with the understanding that the price of the next contract shall by no means be influenced by the present one, and that the contract shall not be broken by the agent except he can show reasons for suspending work at that point by a want of that party to go to some other point, or the poverty of that point for mineral. This is a simple easy remedy, and if practised the miner could get the wages now allowed them in the same prices paid per foot or fathom when they were only allowed 2*l.* and 2*l.* 10*s.* per month. It is astonishing, and no more astonishing than ruinous, for any mining company to support such system of work.

In too many instances, let the representatives of any company go to the account-house any time after 10 o'clock in the evening till morning next day, and they would find the night captain in bed. Let them go underground, and in three cases out of five, at the same time by night, and they will find darkness and silence. The question might well be asked how is this allowed, how can the miners expect any pay? Why, the prices are paid for the coming contracts in accordance with the amount of work done in a given time—not in accordance with what men could do. Throw aside such system of short stent and give long ones, and the miners would get satisfactory wages upon the same prices paid when wages were low enough. Add to this, however, civility. I have seen men at account-house doors half-an-hour, being afraid to go in to ask for work, fearing they would be treated as the most wicked would treat the brute beast, and when they get an agent or captain out doors they would have to follow him wherever he might be going to get an answer.—*Ontonogon, L.S., U.S. Oct. 15.* — A MINER.

PRACTICAL MINING—ACCOUNTS, SUPPLIES, DUES, &c.

SIR,—As a reader of the *Mining Journal* I remark that much has been written about Practical Mining, and the different pursers of mines keeping back the monthly costs of the mines, and giving credit for the returns of ores up to the day of meeting. Now, is such management just to the investing public? When buying stock they expect to buy it clear of debt. This system calls loudly for reform. I presume that pursers of mines who manage and cook their accounts in such manner belong to the strictly Conservative party? or who, I ask, are the true Liberals of the day? Mr. Nicholas Ennor, from his experience in mining matters, ought to be a great authority; why does he not boldly tell the lords of mines that the dues or royalty are too high by one-half, and at no very distant period they must and will discover their error. As to the way of furnishing supplies to mines, this is also a crying evil of the greatest consequence. Capt. Teague has spoken out as to the monopoly of the smelters. Why not sell all the tin and copper ores by sample on the same principle lead ore is sold? The monopoly is apparently done away with in the sale of lead ores! Smelting tin and lead is by no means so expensive a process as many persons think. A rich mine provides the capital. Cash can always be had for all metals by allowing 1 or a little more per cent. These mines call loudly for reform, and those gentlemen who preach one thing and perform another ought to be exposed. Mr. Ennor appears to be the right man in the right place, from his practical knowledge in mining, to expose such abuses, and be a little less severe upon the poor agents, who cannot put ore in the ground. — AN ADVENTURER IN MINES. *Devonport, Nov. 4.*

MINING IN PEMBROKE AND CARMARTHEN.

SIR,—Having spent some time in these counties, and had plenty of opportunities to see the various mines and lodes, I cannot help expressing my regret that mining is so much neglected in this part of Wales. The greater part of Pembroke and Carmarthen consists of what is known among geologists as the clay-slate group of the metamorphic system, and among Cornish miners as the killas. The strata are generally very much thrown up by trap rocks. It is a well-known fact that these primary formations are the great metalliferous rocks of the world, Nature having had the longest time to elaborate these minerals from the solutions continually percolating through their fissures. The number of lodes traversing this part of Wales is quite marvellous. They are to be found everywhere. A railway that has recently been made from Whitland to Cardigan Road has cut through the backs of at least a dozen, all rich in gossan, and having every appearance of containing lead and copper in depth. The only mine that has been extensively worked is at Llanfyrnach, and has given large quantities of silver-lead. This mine was very much damaged by mismanagement a few years ago, but, under the present vigorous direction of Capt. Roberts, seems likely to give as much more lead as it ever has. Not far distant from Llanfyrnach is Trelech Mine, one of the richest lead mines, I think, that it is possible to meet with. It has, however, like many others, been very unfortunate in its management. The first company that started it, with an outlay of 3000*l.*, raised 11,000*l.* worth of lead ore. Some dispute then arose among the adventurers, and the miners were left without being paid, whereupon they summoned the company, and a bailiff sold all the machinery off the mine to pay the wages. Since this the mine has not been worked. I visited it a short time ago with an intelligent miner who had been working there, and he told me that the main lode had not been cut, all the lead that had been raised was taken from branches. I picked up on the old dressing-

floors lumps of pure lead ore as large as my fist. The mine is so situated that there is a plentiful supply of water to work all the machinery, so that coal, the use of which now-a-days is the curse of mining speculation, is not required, and the mine can be worked in the most inexpensive manner. Truly, such a mine as this ought not to be allowed to remain unworked; but there it is at a standstill, and capitalists investing their money in worthless concerns in Cornwall and North Wales which have not for years paid a dividend, and which have not the slightest chance of ever doing so.

C. A. MORRING.

MINING IN THE LLANRWST DISTRICT.

SIR,—Some little time since you were good enough to publish, at my request, in the *Mining Journal* a series of letters on "Mining in North Wales, and its Prospects." My object in writing those letters was to direct the attention of some of your numerous readers to what I considered a good, but much abused and unjustly neglected, district. I wrote decidedly in the interest of Welsh mining, and, perforce of that intention, in the interest of Welshmen. In one of those letters I stated incidentally that granite was found at Trefriw, a village about 2½ or 3 miles from the Llanrwst Lead Mines. I also stated that fossiliferous plants were found at the mines, and gave it as my opinion, from certain reasons which I stated, that they belonged to the Devonian period, and I now add that I alone am responsible for that opinion. The other statement objected to by "Cymro" and "Mr. Kenrie"—namely, that granite was found at Trefriw—I am indebted for to Mr. R. T. Rogers, one of the most respectable and respected citizens of that place; and he again, without making any pretence to a knowledge of geological science, showed in a printed document the source whence his information was derived. This was contained in a report upon the ground in question prepared by Mr. William Roberts, a gentleman, if I remember correctly, of some place in Carnarvonshire, and who is reported to have had considerable experience as an expert in this and other parts of Wales. Personally, I can neither confirm or deny his statement, as I have never been to Trefriw, and it certainly did not occur to me to question the knowledge or veracity of that gentleman upon a matter so trivial as the identification of granite, and I still think it is quite as likely he was right in that statement as either of those gentlemen who have disputed it, perhaps neither of whom is aware that more than one kind of granite exists, independent of mica. But, be this as it may, and after reading the letter of Mr. John Kenrie in the Supplement of last week's Journal, I may be excused for saying that if judgment were to proceed from that display of geological knowledge—or rather its converse—he will not be credited in the estimation of your readers generally with being much of an authority upon such matters. He commenced his letter by saying he had known the district in which the Llanrwst Lead Mines are situated for many years, and that "he always understood that the geological position of the rocks in the district underlay the fossiliferous," and in the concluding part of the same paragraph he states "he always considered" the rock formation of the district to "belong to the Lower Silurian System." It is quite natural that I should now ask him if he considers the Lower Silurian to have preceded the age of fossils? Strange ideas one meets with in this strange country of Wales. But, to proceed, these gentlemen affect very much surprise at my saying fossil plants, of even any period, were found here. I, in my turn, am surprised that anyone pretending to the slightest knowledge of geology could possibly walk over these hills and roads by the light of day and not notice them. There is here the most extensive arborescence I have ever seen, and in most beautiful and striking outline. To afford you some better information on the subject than I can possibly convey by writing, I will send you, by London and North-Western Railway, a few specimens of the fossil plants I refer to.

I was well aware the time I made the statement regarding the fossils, which, if we may judge by the ordinary tenor of language, produced a sensation in the minds of these local savants of geological science, that I was opposing myself to popular views on the subject; indeed, I said as much. But if there were no popular errors, one might hesitate to commit himself at any time to new theories. But my presumption was accelerated, if not confirmed, by a variety of considerations, the principal of which was the occurrence of graptolites, accompanied by a highly siliceous rock, which seems to have been formed from the infiltration of vegetable matter, added to which must be the occurrence of red conglomerate, which is found here in close proximity to the other (above-named) rocks. But for these considerations, the abounding arborescence which is so extensively met with here would, in all probability, have induced me to believe that this particular section of ground was in close proximity to, if it did not actually belong to, the carboniferous period. Perhaps your St. Asaph correspondent will be kind enough to inform us what becomes of the carbon when vegetable matter, instead of being changed into coals, is silicified, and to what extent carbon may be a constituent of slate rocks, either in the shape of coals or siliceous petrifications. And if he recognises any other mineralising agent for carbon besides sulphur and silica acid; or in what form other than carbonic acid it may be dissipated from its containing rocks; and whether carbon has ever been found in appreciable quantities in the Sower Silurian rocks, either in the Cambrian or Cumbrian divisions. Carbon is condensed from vapours in these mines like lampblack, covering every flat surface, especially those which have sufficient moisture to constitute a menstruum to condense the current vapours; and what conditions, whether aerial or aqueous, he considers to be necessary to decompose carbonic acid, to liberate the oxygen and assimilate the carbon. The gentleman admits, as if it were a peculiar case, and he was making a liberal concession to acknowledge it, that igneous rocks occur at Trefriw, but says nothing of the igneous rocks which occur at these mines. Perhaps these also are regarded by him as belonging to the Lower Silurian system, which, in his category, "underlies the fossiliferous." It appears to me that Mr. Kenrie has undertaken voluntarily to champion "Cymro's" cause with much less knowledge, but greater conceit, than that gentleman displayed.—*Llanrwst, Nov. 4.* — ROBERT KNAPP.

THE PROSPECTS OF CORNISH TIN MINING.

SIR,—Who dare to state that Cornish Tin Mining is under a cloud, or that the public fail to recognise the merits of mines possessing minerals in paying quantities? We have noticed with satisfaction the graphic remarks and practical suggestions contained in Mr. N. Ennor's letters, published from time to time in your valuable Journal, and we think with him that four-fifths of the schemes and deep mines at work and foisted upon the public notice had better be shut up and abandoned. Then we should have workmen in abundance, skilled and practical miners (through competition), and better prices for our products. There are hundreds of mines said to exist and at work in Cornwall that produce from nothing up to 5, 10, 20, and 50 per cent. of minerals against costs of working that never have, nor never will, pay the adventurers a single farthing; yet they contribute to the vested interests of Cornwall—i.e., landlords, merchants, manufacturers of machinery, bankers, lawyers, tradesmen, captains, clerks, and higher wages to workmen, for not only is the whole product but also the calls made spent in Cornwall, and tend to swell the money sunk in promoting the vested interests of the county, and without one single atom of gain to the outside shareholders.

We do not for one moment object to progressive mines, nor would we stop indiscriminately all deep and non-dividend concerns, for from the former spring the prizes that fascinate the public, while they encourage the enterprising in the development of the hidden wealth that at times return the earnest and studious miner tenfold—nay, in many instances a hundredfold—his outlay; but these deposits of wealth can be discerned by the known and unerring laws of Nature; these are as perceptible in veins and lodes, strata, and east and west electric channels and currents, as they are in the magnetic influences of north and south cross-courses, slides, heaves, junctions of lodes, elvans, different strata, ironstones, and the existence of gossans, quartz, decomposed and crystallised spar, granite, clay-slate, and numerous other phenomena in connection with mineral wealth in veins, sufficient in quantity and quality to remunerate the miner for his expenditure in money and time. These guiding lines of Nature's laws are well known to practical authorities, yet the mass

known exposure. We continued driving on it with all speed to open the road to be rich from this point up to the 10 fathom level, so we were exposed 10 fms. in height for future working. Yankee having a hole 10 fms. from the shore. From this point we started a south-west drive towards No. 2 mine, where the junction of 70° and 40° lodes exist. We accepted the 70° lode as the main lode, and the 40° lode as a branch. At this level will open out good ground for future stops, as the lode is strong and promises good results.—End on 45°, Welton's Lode: The end having been reached, more than necessary, we began to stope the bottom of the level to give ground and to pass under the river without danger; besides, we shall be able to get a small haul which stands now in the bottom of the channel, when we get to the level. We then took the 40° lode, and worked to explore the junction of the 70° and 40° lodes, and, in case of finding more mineral, to sink in to the 20 fms. drive, coming from the Yankee mine 20 fms. level.—Surface Extraction: This hole into old workings about 5 ft. below California stops. Now we will

The motion was unanimously passed, and Mr. LITTLE returned thanks, approving of the very excellent meeting they had had, and again expressing his belief that Penstruthal would be a great mine.

The CHAIRMAN had a very hearty vote of thanks for presiding. At a lunch subsequently held the health of the under agents (Capt. White and Morcom) were drunk, and each responded. Both remarking on the excellent work done, and the fine lode opened up and to be found in this immense set.

Capt. TRAVERS, replying for Penstruthal and Cornish Mining, said: "I have been connected with mining ever since I was a boy, and have filled almost every capacity in it. All these years I have been so fortunate as to hold a few shares in Cornish mines. Nothing has given me more pain than when Cornwall has been under a cloud. Often have I yearned for mining, and wished myself in a position to assist it. But I have not assisted it very much, although I hope to be connected with Cornish mining all the days of my life. (Applause.) I am one of those persons who think so much of mining that if I had 30s. or 20. to spare I would spend it whether I got any return or not. We must remember that this money affords employment for our miners, and I have come to this conclusion, that I would rather get 25s. out of a Cornish mine than 30s. out of any other pursuit. (Applause.) I have yet to learn why Cornish mining should not be looked upon with more favour than it is at present. I think that Cornish mining when properly, honourably, and straightforwardly conducted is one of the best speculations which can be embarked in, whether we get returns or not. I have yet to know what any very considerable losses there have been in the country. I do not think that mining owes Cornishmen much, and I also believe that if traced back we should see that the origin of many of the wealthy in this country was mining. And if not directly Penstruthal, the most wealthy families in the country had to thank the parish of Gwennap, in which Penstruthal was situated, for much of their great wealth. (Applause.) Is there no chance of doing this again? I believe that a lot of the lodes in this mine have only been scrambled over. (Applause.) I trust that Penstruthal will go on and turn out a trump, and I am not going in for the management without taking a few shares. (Applause.)

This concluded the proceedings.

CATHEDRAL MINING COMPANY.

A meeting of adventurers in Cathedral Mine, Gwennap, was held in the account-house, on the mine, on Wednesday—

Colonel COMYN in the chair.

The CHAIRMAN said: Gentlemen,—You are aware that this is an intermediary meeting of this company. The accounts are not to be presented at this meeting, but it was felt to be desirable, inasmuch as a large number of shareholders in this company would be in the locality to attend the meeting at Penstruthal, held yesterday, that this meeting should take place on the mine, not only for the convenience of those shareholders, but also that the shareholders might have the opportunity of seeing and examining the property in which they have invested their money. (Hear, hear.) The directors do not propose to make any formal report at this meeting, and, therefore, all I shall have to do will be to make a few comments upon the agent's report on the state of the mine and its prospects. I will now read Capt. Mitchell's report.

Nov. 5.—Since the last meeting we have forked the water out of Colonel's engine-shaft, and have sunk the same 6 fms. 3 ft., which is now 6 ft. below the 10 fathom level, or 30 fathoms from surface; the lode has varied in width from 4 to 6 ft., composed of prain, peach, and gossan, the latter about 3 ft. wide, mixed with good stones of copper ore, some of which we have had assayed, and they made a produce of 16½ per cent. I consider it to be a strong and promising lode, and do really think that if we persevere and go a little deeper the result will be that we shall meet with a rich course of copper ore. In the 10 fm. level we have driven 4 fms. west, the lode is 4 ft. wide, and worth for tin 7½ per fathom; this ground we are able to open out for 30. or 40. per fathom, therefore it will have a good profit. In the 10 east we have driven 3 fathoms, and the lode is 3 ft. wide; this end we have suspended for awhile until we get down a little further, so that we may be enabled to cut pit and barrow-way.—Doctor's Lode. In the adit west we have driven 5 fms. 3 ft.; this end is 17 fathoms from shaft, the lode being small, and having gone through a good piece of ground in the bottom, we propose to set it on tribute. The tributors sold a parcel of tinstuff from this which brought 6½ per ton.—Rawson's Lode: We have commenced to sink Rawson's shaft with a good pair of men; the lode is 4 ft. wide, and producing good stones of tin, worth 10½ per fathom, and judging from the ground above being worked away by the old miners, and the fine stones of tin we found in clearing up the shaft, we may expect ere long to meet with a good lode of tin. I should advise you to drive a cross-cut north from the 10 fm. level to Colonel's shaft, to intersect this lode in about 15 or 18 fms., and it will be the means of draining the water from Rawson's shaft, and enable us to work it at a better advantage. In the adit we have driven a side level 10 fms., and have cleared and secured 180 fathoms, and I am very pleased to inform you that the adit is now entirely clear and secure, and that the cost of working our engine, including everything, is only 25s. a month. I have only to add that I consider our prospects are better than ever, clearly improving every inch that depth is attained. Colonel's lode is presenting a highly mineralised appearance, altogether of a most splendid character, and, moreover, producing in places stones of copper of high purity, in as true a gossan as any ever found in Gwennap over the richest courses of ore. The tin lode also being of a very strong character, producing such rich work in places as to leave no doubt as to there being regularly continuous rich courses of ore at but little greater depth than the present working.—JOSEPH MICHELL.

The CHAIRMAN continued: I think you will all say that this is a very satisfactory report. There is no doubt, I think, that we possess in this set a most valuable mining property. We have got there as well-defined lodes as ever were seen in this country, each of them producing very rich stuff, and we only want a little time and patience to produce something that will gratify anyone who has ever made an investment in the company. (Applause.) I have been down to this mine several times, and though I do not profess to be a miner, yet, in my judgment, from what I have seen on the mine, I am perfectly satisfied that at this Colonel's lode—possibly when we get a little deeper—the gossan will consolidate, and produce a very rich copper lode. Rawson's lode, which is good for tin, is only 15 fms. off, and can easily be worked by means of a cross-cut. I have very little doubt that the agents will shortly be able to communicate to this lode, so that we shall be able to drive upon the both lodes and get away the water by the present engine. This will enable us to develop the mine at a small cost comparatively. Doctor's lode is a small distance off; it is a parallel lode, but it has been thought better to suspend the working for the winter. The water is coming rather quick, and as it is so much quicker in winter than in summer, it is better to suspend operations for the time. There is, however, no doubt as to the quality of the lode. It is making magnificent stones of grey copper, with tin branches alongside of them equal in promise to anything that has been seen in the mines of this or any other district. (Hear, hear.) We are told that in the end of the adit there is a large lode standing, but the water is making there so quick that, as I have said, we intend to suspend operations for awhile. I do not know that beyond this I need add anything to the report. The history of the mine has been rather unfortunate, but that has not been the fault of directors or agents, or anyone connected with the mine. It is an entire loss of the running in of tin in shallow adit, which takes off our surface water, and the water of other mines in the neighbourhood. (Hear, hear.) So serious was this that I believe 500 fms. had to be cleared last year. During the whole of that time we could do nothing in the way of working on any of the lodes, and, consequently, much valuable time has been lost to the shareholders through that circumstance. We are not singular in that, because other mines in the country, through the excessive rains which prevailed last year, suffered as much as we did, and many to a much greater extent, our loss being chiefly in time. Now that adit is clear, and firmly timbered in every respect, there is no chance of such an occurrence happening again. (Hear, hear.) I am a large shareholder in this concern, and I have the utmost belief in it. It is a splendid district; all that is wanted is a little patience, and we shall be amply rewarded by and-by. (Applause.) Our mine is in a district which has scarcely ever produced a failure; and I have been told by practical men that it is in ground of such a character that there is very little chance—in fact, no chance—of the metals being out. It is easily worked, and is in every way congenial for the production of metallic ores. (Applause.) The delay that has taken place in its development has arisen entirely from circumstances over which the directors have no control, and which they have done their best to remedy. (Hear, hear.) Now there is only plain sailing before us, and we hope to get on the road soon when we meet we shall be able to tell the shareholders a much better tale than we have had to tell them to-day. (Hear, hear.) We have had the opinions of some of the highest authorities in the country in favour of the mine. Capt. J. Kendall, a man born and brought up in this district, of great experience—experience as extensive as any one's—who once worked in the mine himself, makes a most satisfactory report of it. Mr. Hichins, himself a considerable shareholder, has upon more than one occasion expressed the very highest opinion of the mine that any man could express; and I do not see the slightest reason for any despair of successful working. (Hear, hear.) There are numerous lodes, parallel to each other, easily accessible, and I do not see any difficulty in the matter. Let the shareholders give us their confidence a little longer, and exercise a little more patience. It has been tried severely, but I think the sequel will show that their patience will be rewarded in a most ample manner. (Applause.) I now beg to move that the report be received and adopted.

The report was unanimously adopted.

Capt. MICHELL: I can endorse all that the Chairman has said in connection with the mine, our prospects are really exceedingly good, and I believe that in a short time we shall open up a great mine; we are as you, Sir, said surrounded by the richest mines ever known, and we have twelve lodes, if not more, in our set. Our prospects are very cheerful, and I think with a little perseverance we shall satisfy the shareholders.

The CHAIRMAN: How long will it take you to drive the cross-cut to intersect Rawson's lode?—Capt. MICHELL: We calculate about four or five months. You may put a rod to work Doctor's lode from the engine by and-by. The CHAIRMAN: Then if you cut the cross-cut you would drive upon the two lodes simultaneously?—Capt. MICHELL: Yes.

The CHAIRMAN next enquired if a considerable reduction in the cost would not be effected by the sinking of ore.

Capt. MICHELL replied in the affirmative. The total cost would be brought to about 1500 a month, and there would be returns of ore that would pretty nearly meet that. Some tin was about to be sent to Trevelar stamps to give it a trial. He was rather inclined to think the returns would nearly pay the cost of the mine. He should continue to sink while the driving was going on.

The CHAIRMAN: You have driven a little west; is it sufficiently west for you to continue driving and sinking at the same time?—Capt. MICHELL: Yes.—The CHAIRMAN: Then you mean to put in this cross-cut immediately?—Capt. MICHELL: Yes. We shall begin to cut this to-morrow. We suppose it will take nearly a week or 10 days to cut the pit, and then we shall begin the cross-cut.

The CHAIRMAN asked if the lode did not contain tin, and if so in what quantity?

Capt. MICHELL replied that it did. They had tried some samples that day, and the result had been full 1 cwt. to the ton. They had likewise found very rich copper ore in the gossan, and the prospects seemed very bright.

Mr. HICHINS: From what I have seen I am fully convinced that a very brilliant result awaits us at a little deeper development. I have never hesitated to say from the commencement that the indications are quite equal to anything I have ever seen in my experience. I refer more especially to the rich gossan in Colonel's lode. It was upon that that I took an interest in the mine, being so satisfied that this structure indicated a rich copper ore formation, which would be realised comparatively little deeper than the workings there were. (Hear, hear.) Since that period the workings have, unfortunately, been interrupted by the circumstances referred to

just now, otherwise I believe that by this time the mine could have been sunk to such a depth as would have come into a very rich body of copper. The lodes are precisely in the same rock formation that has been so productive in other mines in the district, and they are very numerous—I believe 15 or 16 altogether. Some of them could hardly fail to turn out as well as they have in neighbouring mines. (Hear, hear.) In all these indications are such as, in my experience, would extend the existence of large and rich deposits of metal at no great depth below, and make this mine a very profitable one. (Applause.)

The CHAIRMAN: These lodes are intersected by cross-courses, are they not?—Mr. HICHINS: Yes, and by elvan courses, which have had such a beneficial influence on the lodes in the district.—The CHAIRMAN enquired if Mr. Hichins's views had been at all modified from time to time as the result of his inspections?—Mr. HICHINS replied that his opinion of the value of the mine was even stronger now than it was first. The lode seemed to have concentrated, and he was of opinion that they had not much further to sink upon Colonel's lode before they would cut a valuable course of ore. (Applause.)

Mr. GREENE (the secretary) enquired how the character of the lodes agreed with those with which Mr. Hichins was familiar in Devon Great Consols?—Mr. HICHINS: The country is of the same general character, but of course the lodes are not so large.—Mr. GREENE asked Capt. Mitchell how far the two lodes between which he proposed to cross-cut were apart, and whether they underlay?—Capt. MICHELL replied that they were parallel and perpendicular—at least, the latter was very much so. They were used by the other 15 fathoms—and he thought he could complete the cross-cut in three months. He expected to make returns of ore within that time. (Applause.)

The CHAIRMAN then asked Mr. Murray, who was present, to give the meeting the benefit of his practical experience as a geologist. If he would do so the meeting would be very glad of it. (Hear, hear.)

Mr. MURRAY replied that he had looked carefully over the mine that day, and from what he had seen at the surface he had formed a very favourable opinion of it. The mine stood well, on a granite plateau, like Penstruthal, and all the conditions appeared to be favourable for metallic deposits. He had seen some remarkably fine stones of gossan, vesicular, and quartzose, which appeared to indicate very favourable results indeed. One very important feature was that the lode lay between two great cross-courses. (Hear, hear.)

The CHAIRMAN would like to hear the views of Mr. Kendall. He had heard that gentleman speak of the mine in terms of the highest praise, and he felt it would be a very great satisfaction to the shareholders to hear what Mr. Kendall had to say. He wished to know whether Mr. Kendall's opinion of the mine had been formed by what he had seen in the course of his working. (Hear, hear.)

Mr. KENDALL said he had reported entirely of what he had seen. The more he saw of it the stronger his opinion was of its favourable results. (Applause.) The Colonel's lode, upon which they had been working, indicated in its gossan that a large bunch of ore was not far off from the cross-course where such large deposits were generally found. At the depth they had gone he thought it impossible that more favourable indications could have been seen. Then they had Rawson's lode, which they were going to cross-cut. That was a very important tin lode, and he remembered himself large quantities of tin being raised from it. (Hear, hear.) The mine stood well before the people of the neighbourhood, but perhaps the directors had applied to it until now. The workings were already several fathoms deeper than the old workers had been able to carry them, and at the lode in the bottom was worth, in his view, very much more than 12½ a fathom, at which it had been valued. However, there could be no doubt it was better to under than to over estimate. It was his firm belief that in Cathedral the shareholders had something good.

Capt. MICHELL: I may add that I believe our engine will take us down to such a depth as will satisfy us we have a very good mine. (Applause.)

The CHAIRMAN: Personally, it is exceedingly gratifying to me to hear such good accounts of the mine. It has cost me a good deal of anxiety, but I am not afraid we presume the shareholders will exercise a little more patience, and I am not afraid we shall have good results from the practical working of the mine. (Applause.)

Col. Comyn, Messrs. Freeman and Hichins were then elected directors, and the proceedings closed with a vote of thanks to the Chairman.

WEST WHEEL JEWELL MINING COMPANY.

A meeting of adventurers in West Wheel Jewell was held on Wednesday, in the account-house on the mine.

Mr. MATTHEW GREENE in the chair.

The CHAIRMAN, in opening the proceedings, said: The object of calling this meeting is to afford the shareholders an opportunity of fully discussing the position and prospects of the mine, and of considering the way in which the operations should be conducted. It cannot be disguised from the shareholders, notwithstanding the expectations that were held out by the original managers of this company, who boldly committed themselves to the work of erecting an engine, and clearing, sinking, and securing a shaft to the 107 fm. level, that their efforts proved a failure. Upon thoroughly examining that level it has been found that the lode is not sufficiently productive to warrant our expending any more money in this part of the mine. It has, therefore, wisely been determined to apply to any and every resource to develop the western part of the set. This change will carry with it a very considerable saving in the monthly cost. It will be seen from the manager's report that the coal bills are now the heaviest item in the cost; and that a very important saving will be effected. A trial shaft has already been sunk on the western ground, which has proved the value of the lode. Although only down 12 fms. from surface very fine stones of tin have lately been broken from the lode, which certainly fully justify the recommendation of the manager that we should vigorously develop this western ground. (Hear, hear.) It must, however, be remembered that we have made continuous sales of tin ever since the commencement; and a recommendation which the directors have had with the manager we have reason to hope that the returns will be largely increased. In all we have sold nearly 75000 worth of tin. I will now read the manager's report.

Nov. 5.—In handing you my report I may observe, in the first place, since the commencement of operations we have raised and sold about 75000 of tin ore, the major part of which has been got from our western ground, at and above the adit level, and from trials made in the western portion of the grant. I feel satisfied that we cannot do better than confine our future operations to developing this part of the set. In support of this argument a trial shaft has lately been sunk 12 fms. from surface, and the lode has been found to be well defined, 18 in. wide, of a granitic matrix, and interspersed with veins of pure oxide of tin. A very large saving will be effected in our monthly cost by directing our attention to the development of the western ground, and a great reduction made in our coal bills, which have been the heaviest items in our expenditure. We have commenced to drive the deep adit, which will unwind the ground referred to 70 fms. deep, and will give us that depth of backs without the aid of steam machinery. From present appearance (although very largely reducing our cost) we expect from vigorously pushing on the works named to increase our sales of tin. Samples from the lode in the western shaft have been tried this day, which will give a very high percentage of tin. We certainly are in the right position geologically speaking, surrounded by mines that have returned immense quantities of mineral. The fact cannot be denied that the company's operations by the western ground, and a great reduction made in our coal bills, which have been the heaviest items in our expenditure. We have commenced to drive the deep adit, which will unwind the ground referred to 70 fms. deep, and will give us that depth of backs without the aid of steam machinery. 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paid-up shares, and 2s. 3d per share on the new shares, being at the

But, so that the meetings in future might be held the first week in March instead of November, and then the directors would be able to present a balance-sheet. It was rather singular to find that there should be so various opinions as to the dividend. The directors were all in favour of it, and generally, having been so long in the dividend so long, would have said "Pay it;" but it was a singular fact that there were about half-a-dozen large shareholders who said "Keep the dividend in reserve, and increase the value of the shares." But he himself said, "We have made a profit, and why not divide it?" (Hear, hear.) If those gentlemen who had previously dissented from the payment of a dividend were now present, they would be able to express their views. He was not at all sure that they could have entirely failed to convince him of the correctness of their opinions. The directors had made the money as profit, and it was better in the possession of the shareholders. It was true that the dividend was small upon the 57. shares, but

number of gentlemen to take part in certain operations, in the event of their being satisfied that such operations were likely to prove successful, and surely the directors ought not to be placed in the position that at the last moment those under-

takings might fall through because the shareholders (who did not know so much about the details as the directors) did not approve of them. He, therefore, hoped the shareholders would repose full confidence in the directors, and not require every little operation of this kind to be brought before a general meeting of the shareholders. (Cheers.)

Mr. BERGHEIL said he referred entirely to the buying of mines in Nevada, and not to those other operations to which Mr. Spratt had alluded. If nine or ten other gentlemen associated themselves with the directors in carrying out an enterprise there was security in the very fact, but if the directors by themselves entered into any speculation he thought that for their own sakes they should bring it before the shareholders before finally concluding it.

On the motion of the CHAIRMAN, seconded by Mr. BERGHEIL, Mr. Spratt was then re-elected a director.

Mr. LAYBORN then proposed that Mr. F. Gold be elected to fill the vacancy on the board caused by the retirement of Mr. Seyton. He said that Mr. Gold had had great experience in business, and would, he was sure, be of great service to the company. A SHAREHOLDER seconded the resolution.

A SHAREHOLDER: I do not know Mr. Bergheil, but he is evidently a man of great earnestness, and I have such confidence in his capacity that I think he would be a very useful man to be on the board. I, therefore, propose that he be elected a director in the place of Mr. Seyton.

Mr. BERGHEIL said he could not accept the nomination in opposition to Mr. Gold. Mr. Gold, on all that has passed previously, he ignored, and let the shareholders elect whom they like.

Mr. BERGHEIL said that, under these circumstances, he should be willing to serve if elected by the shareholders.

A show of hands was then taken, and Mr. Bergheil was declared duly elected a director. The auditor, Mr. James Ford, was then re-elected.

A special resolution was then passed, by which in future the meetings of the company will be held on the first Wednesday in March in each year.

A vote of thanks to the Chairman and directors closed the proceedings.

GLASGOW AND CAPE BRETON (NOVA SCOTIA) COAL AND RAILWAY COMPANY.

A meeting of shareholders was held at the offices, Great Winchester-street-buildings on Wednesday.—Mr. MICHELLS in the chair.

To take into consideration, and, if approved, to sanction and proceed to effectuate by such resolutions as are hereinafter indicated a scheme which has been arranged between the directors of this company and the directors of the Lowry Coal Company, Cape Breton (Limited), and the directors of the Schooner Pond Coal Company (Limited), for the amalgamation of the three companies into one united company, under the name of the Cape Breton Company (Limited). The arrangement is contained in a provisional agreement between the three companies, and Frederic William Blunt on behalf of the promoters of the new company, which agreement is dated Oct. 24, 1873.

The CHAIRMAN said the directors had thought it better to call the meetings of the shareholders of the Cape Breton Company and the Schooner Pond Company at the same hour, as there were many gentlemen who were shareholders in both companies, and the remarks he had to make would apply equally to both classes of shareholders. The meeting now being held, however, was a meeting of the shareholders of the Cape Breton, and, therefore, he would ask those gentlemen who were shareholders in the Schooner Pond Company only, not to vote on the questions submitted at this meeting. He (the Chairman) then proceeded as follows:—You have heard the summons to our meeting read, and we have asked you to come together to give your sanction to the scheme therein foreshadowed. It has been after mature consideration, and, as we believe, in the true interest of our shareholders (some of the largest of whom, I believe, thoroughly approve of the step we have taken), that we have determined on bringing the proposed amalgamation before you: and I trust that the course we have adopted will have your entire approval, and that you will accord us your support and sanction for what we have undertaken. After much debate and great consideration, it has appeared to us that the ultimate success of the various undertakings in Cape Breton can and will be greatly enhanced by the course proposed. The experience of the last two years has shown the almost absolute necessity of having a rail communication with Louisbourg; and by the amalgamation this desideratum will be accomplished. The union of the various companies under one management will enable the working expenses to be materially reduced, and will avoid the competition and contentions which necessarily arise from divided interests. The acquisition of the new mining areas will place under the management of the new company nearly the entire coal-producing portion of the island, served by the proposed and existing line of railway, commanding the supply of coal to Louisbourg while retaining the outlet of Sydney. This most desirable end will be well understood by all who have considered the question of the disposal of the output. Beyond all this, it is evident that a much larger plant than is at present existing is possessed by our company, is requisite to work adequately the very large trade that is springing up; and this will be obtained by the new capital to be raised. We have made profit, but it has been consumed for repairs and extensions. We think that the terms offered to us are fair, and that the proposed to give about six nominally paid shares in the new company for five in the present company, or about 20 per cent., as an equivalent for the assets given up, will be looked upon as a moderate but still just arrangement for the future. I do not wish personally to enlarge, or to say too much; but, as a very large shareholder, I feel that I am doing the best I can for myself, and can assure you that I believe the amalgamation will do more to make a success than any other course I can look to. I can only say that, should you desire to confer with the directors they will be most happy to afford every information. (Cheers.) I shall not say anything more, but will move the first resolution, "That the company be wound-up voluntarily."

Mr. HEATH seconded the proposition, which was carried unanimously.

Upon the proposition of the CHAIRMAN, seconded by Mr. BURTON, it was unanimously resolved to appoint Mr. J. L. Elkin liquidator.

Mr. BLUNT, in reply to a question, stated that in the transferee of the property it was necessary to take over all existing arrangements from the old companies, but it was quite competent to the new board to reconsider the arrangements with Mr. Gishorne, and no doubt those arrangements would be re-arranged in some way. The agreement with Mr. Gishorne did not terminate till the year after next.

A SHAREHOLDER said that Mr. Gishorne had desired him to place his resignation in the hands of the new directors.

Upon the proposition of the CHAIRMAN, seconded by Mr. WHITE, it was unanimously resolved—"That the liquidator be authorised to discontinue the undertaking of the company to the Cape Breton Company (Limited), for the consideration of £21,157, and expressed to be made between the Lowry Coal Company, Cape Breton (Limited), of the first part; the Glasgow and Cape Breton (Nova Scotia) Coal and Railway Company (Limited), of the second part; the Schooner Pond Coal Company (Limited), of the third part; and Frederic William Blunt, acting on behalf of the promoters of an intended company, to be called the Cape Breton Company (Limited), of the fourth part."

Meetings of the Schooner Pond Coal Company and Lowry Coal Company were then held, when similar resolutions were unanimously adopted to those passed at the meeting of the Glasgow and Cape Breton Company.

The CHAIRMAN said he looked forward most anxiously to the success of the Cape Breton Company (Limited). They had the coal, and there could be no doubt as to the necessity for it, nor that there were immense advantages in the district that must eventually be developed. They had had two years' work—during the first but little progress was made, but the second had not been unsatisfactory, and if a very large outlay had been made certainly some profit had been realised. He trusted that in future they would meet with very much better results than the board had ever yet been able to submit.

Mr. WHITE proposed that a vote of thanks be passed to their indefatigable Chairman, who, no doubt, had laboured for the welfare of the company at heart. He Mr. White believed that the new institution possessed every element of success—could never again be exported from this country to America, and he had the testimony of shareholders not only that the coal was good but that it improved.

Mr. FINE seconded the proposition, which was put and carried unanimously.

The CHAIRMAN acknowledged the vote, which closed the proceedings.

UNITED MEXICAN MINING COMPANY.

The ordinary half-yearly general meeting of shareholders was held at the offices, Great Winchester-street-buildings, on Wednesday.

Mr. CHARLES MORRIS in the chair.

Mr. W. M. BROWNE (the secretary) read the notice convening the meeting.

The report of the directors stated that for the six months ending June 30, 1873, there had been an excess of output on the old concern of \$11,521. The total amount of expenditure for the same period was \$12,125, but as the original owners have paid \$42,225, the net outlay on account of the company has only been \$8246.

The available funds in the hands of Mr. Hay, in Mexico, on Sept. 20, the date of his last report, amounted to \$8507, and the estimated value of tortois and ones under reduction to \$18,344. The necessity for supplying the commissaries in Guaymas for funds for the prosecution of the new works being obvious, and the exchange for bills being disadvantageous to the company, the directors in September last forwarded to him 60 bottles of quinquina, purchased in London at a cost of \$27, 10s. 10d., and as the price since this shipment has risen considerably here and in Mexico the transaction will yield a good profit.

The CHAIRMAN found himself in the same difficult situation as upon one or two previous occasions—that he had but little to tell the shareholders. The explorations in the new concern were encouraging, and nothing had occurred to cause disappointment; no discovery had yet been made, but they still entertained the confident opinion that satisfactory results would be realised sooner or later. He could but express regret at the high price of quicksilver, and if it advanced much higher it would become almost prohibitory; therefore, they had to hope that some discoveries of that valuable agent would be made elsewhere, and so reduce the price. At Jesus Maria Mine they had endeavoured to reduce the expenses as much as possible, and according to the last advice the cost was being brought within the limit that the returns would meet the outlay. He then moved that the report and balance-sheet be received and adopted.—Mr. GOLDSMID seconded the proposition.

Mr. DOANE asked if the explorations in the new mine could be accelerated, with due regard to economy? Even if it could be done with a slight increase of expense, they would save what they called the dead-weight in this country.

Mr. FURBER said the enquiry, as well as the remarks, were the most judicious he had ever heard at any United Mexican meeting. It was quite certain that if the dead-weight could be divided over a larger

surface it must fall less upon particular works, and in this case they had a certain amount of work to do in driving the adit level. They were now driving 3 yards per week, and it could not be much increased, the rock being very hard; by increasing the workmen progress would not be greatly accelerated, while the more funds would be required, and he did not think it would be prudent to do so at present. If any shareholder would call at the office he thought he could show him that they were engaged in a really legitimate mining speculation, offering very reasonable chances of success.

The CHAIRMAN, in reply to a question, stated that the last call was unexpended, and there were about \$10,000 in Mexico.

Mr. FURBER said that they did not expect to find much until the adit had been driven under the mines which gave ore near the surface. He could not say what was inside the mountain, but he had great hopes; personally he was spending a great deal of money towards realising those hopes. To complete the adit would take five, six, or seven years, but there might be ore close to the present end of the adit, and it might be half a mile off. The adit was now getting very nearly under Buenos Ayres Mine, from which he had seen ore yielding 18 marcos per month, with a fair amount of gold. The excavations showed there was ore at the surface. For the mine of San Miguel de la Providencia on the same lode when last worked he provided 6000, but was driven out by the water.

The CHAIRMAN, in reply to a question, stated that before this work was commenced the shareholders resolved, at a special meeting convened for the purpose, to subscribe 15s. per share; out of that amount only 5s. per share had been called, and of that 2s. 6d. per share remained in hand; and very shortly they would be under the Buenos Ayres Mine.

Major FARRALL said that in 1857 there were coined \$146,349, and in 1858 \$175,527, although in 1856 the company was at such a low ebb that when he went to Mexico he could not borrow upon the credit of the company, and was compelled to borrow upon his own credit \$5000; and since then good dividends had been paid to the shareholders. When in Mexico, in 1851, the company was at a very low ebb indeed; the only thing to be relied upon was when he, as the company's chief commissioner, had the good fortune to conclude a claim which had been paid for many years, and after his predecessor declared he had exhausted every means to obtain compensation from the Government. The claim was for \$300,000, and he succeeded in obtaining a compensation for \$150,000; there was still a residue and interest, the payment of which should now be pressed upon the Mexican Government. Mr. FARRALL was well acquainted with the whole district, and not only with mining generally, but also with local mining, and his opinion merited every respect and attention.

As an encouragement to the shareholders, he might mention the fact that Mount Mine, the English company for working which was wound up, and shortly after friends of his took the mine in hand, since when it had yielded fabulous wealth.

Mr. WILLIAMSON saw no ground for discouragement, seeing that the point to be attained had not yet been reached, and that not one-third of the amount unanimously agreed upon by the shareholders had been expended.

A SHAREHOLDER said all that could be desired of the directors was that they would reduce the expenditure as much as possible.

Mr. ROMNEY recollected the time when the company was in a much worse position than at present, and he said that he had advanced the directors 15s. per share, and the amount should be willingly subscribed. He had been a shareholder 23 years, and was satisfied that they were engaged in a legitimate mining speculation, and he thought the time would come when they would reap the fruits of their expenditure.

Mr. WILLIAMSON, in reply to a question, stated that the suspense account was merely upon paper. The sum had been in abeyance for years, and there was no reason to suppose that ever anything but a very small sum would be called. The probability was that it would never be called for.

As an encouragement to the shareholders, he might mention the fact that the Mexican Government, referred to by Major Farrall, had not been forgotten.

The CHAIRMAN, in reply to a question, stated that the question of the London expenses would be taken into consideration by the board.

The resolution adopting the report and accounts was put and carried unanimously.

A vote of thanks to the Chairman and directors terminated the proceedings.

CHONTALES CONSOLIDATED MINING COMPANY.

(Owing to the lateness of this meeting on Friday, Oct. 31, our report on the following day contained many printer's errors, which we have corrected, and now give a re-issued account of the Chairman's speech.)

The CHAIRMAN said, before putting the motion for the reception and adoption of the directors' report and balance-sheet, he would make a few observations, and any points upon which he might not touch, and upon which subjects more ample information was required by any shareholder, he would be most happy to afford it. It would be impossible to explain everything in the report itself without making it too long; he could, in addition to what the report contained, give some later information from the mines. The first thing he would refer to was the disappointment felt by the directors, mentioned in the report. They had really expected at the last half-yearly meeting that the extra steam-engine would be landed before the dry season set in, and that the new steam engine would all have been in working order, and this expectation had been confirmed by the letters of Mr. Smedley on the subject of more motive power. The spur-wheels had been ordered by him in December, and by the directors in January. These spur-wheels had the first time been imperfectly cast, and Messrs. Harvey and Co., who had always served them remarkably well, had wisely said that instead of fulfilling the order with imperfect wheels, they would have them cast afresh. This had been the cause of their not arriving out there until June. Then came the delay mentioned in the report. Our heavy goods have to be landed in barges on arrival off Greytown, and as the bar outside the harbour is a very bad one, they cannot always be landed in rough weather, and the steamer being under contract with the Government to carry the mails, cannot wait beyond bedtime. Unfortunately happened that on the arrival of the steamer off Greytown with our spur wheels, the weather was so rough that they could not be landed, and they were, therefore, taken back to Colon, and only landed at Greytown by the steamer a month later. By this time the dry season had commenced, and it became impossible to get the heavy machinery up the river to the lake. This was really the cause, and the disappointment was no fault of Mr. Smedley's. He would add to that which they had stated in their report, that they had the latest news in a letter from Mr. Smedley, dated Sept. 5; the last one published was dated Sept. 1, and came out New York, whereas the last one had come by the usual West India mail, which broke down after leaving St. Thomas, and had to put back there for repairs. This letter explained that the railway from San Sebastian to Estrella he had thought it well to commence at once before opening up the mines, as that would be the better course, and he explained the extra cost mentioned in the other letter. They had had, he said, one of the heaviest floods ever known, which had done some damage, but no serious damage, to the new embankment and railway. He sent Mr. Francis to San Udo to enquire about the machinery, with directions to proceed to Greytown if necessary. A subsequent letter from Mr. Francis, dated Sept. 8, informed us that the machinery had been landed at San Udo, and that the port of the lake nearest to the mines, and though the spur-wheels are heavy, there was a prospect of getting all on the mines before the wet season had made the roads impassable. The next thing he wished to explain to the meeting was the specification of the estimated expenditure required in Mr. Smedley's letter of Dec. 30. He (the Chairman) had had a statement drawn up to show what had been done of the estimate. He had estimated that the erection of the new stamps would cost \$500; of that \$144 had at present been spent, and the remainder would be expended in the completion of the stamps. The erection of the engine had not been finished yet, and only \$100 had been spent. For the San Sebastian tramway, \$200 was the estimated price, and this had been completed for \$77, 17s. 3d. The alterations to the stamps had been estimated at \$500, and had been completed for \$322, 13s.; the carriage of stone-breaker, estimated at \$200, had cost \$90, only, so that all that remained to fully carry out his estimate was the completion of the new stamps and the erection of second steam-engine, and these, as stated in the report, could not be completed until the arrival at the mines of the spur wheel and short iron. He would further explain the statement of the quantity of ore dealt with. If this were looked carefully into it would be seen that it was less than the quantity dealt with by the late manager. The cause of this was that Mr. Smedley's engine, much finer than his predecessor, which prevented him from crushing so much ore. At this last meeting he had explained that when Mr. Belt made the discovery of it he fairly worked it out, and did not at once take the bag of richness out, but at the same time he felt certain that Mr. Smedley went more thoroughly through the ground than his predecessor had done. Mr. Smedley had opened out more of the mine, independent of the rich parts as mentioned in his report. This satisfactorily explained the difference in the average yield of the two. He had nothing further to say regarding the mines except to express his belief, and that also of his co-directors, that they were being largely and properly developed under the management of Mr. Smedley, and as soon as the stamps are ready and the engines at work in the dry season they would be thoroughly independent of the water supply; they would then be in a very good position. There was one thing in Mr. Smedley's report which he wished to mention, it was that he had at last decided rather against the construction of a reservoir. The directors had been rather anxious that this should have been erected at one time as proposed by Mr. Belt, and which had been entirely concurred in by Mr. Smedley at first, for the reason that the reservoir would be a protection against the floods, and that in the dry season they would not have so much to revert to the steam-power. He (the Chairman) always had some fear of it, for unless a reservoir of this sort was very strongly, and there was no possibility of building it in more than a few months, it would be a waste of money to build it for them to erect this reservoir at their own expense unless the other company, who would participate in the benefits to be derived from it, shared the cost of erection. Mr. Smedley in his report said—"Having now had more experience of the climate, I have some hesitation in advising the construction of a reservoir. The sudden and heavy floods we are subject to would necessitate the structure being of a very strong and costly description to prevent any risk of its being carried away. As we shall be during the next dry season to apply steam-power more effectively, and shall also be able to obtain more power from the water wheels by the use of the spur-wheels now in transit, I think it advisable to defer the question." He was really of having it, and he would not be afraid of having it made by him; but he said it would cost much more than the original estimate, and the directors concurred in Mr. Smedley's idea that it had better not be done. In reference to the concluding part of his statement respecting the appointment of a new director, it was considered, as the present board always put in a very good attendance, although he regretted the unavoidable absence on this occasion of Mr. Rawlinson, that they did not consider it necessary to fill up the vacancy caused by the retirement of Mr. Baxter; they did not see that if they could satisfy the shareholders with the present board it was any use electing anybody else. If they had seen the necessity of electing a fresh director it would have been their duty to consider, in the interests of the company, the most fit person to elect. If there was a want at the board they would endeavour to get someone who thoroughly understood mines. However, they had a strong opinion that there was no necessity for any addition, but, of course, it was for the shareholders to express their opinion, and the directors would endeavour to carry out their wishes. Two gentlemen had been proposed, and the proposal had taken them rather by surprise, and the directors had not asked for proxies to support them; and if the resolution was passed for the appointment of one of these he was afraid the directors would feel bound to demand a poll, not for their own sakes and opinions, but, as they were supported by a large number of important shareholders, and as the shareholders of the district, 1000 shares, would be impossible to accept the vote, however good the candidates might be. As to the candidates, one was Mr. Darbyshire, and he would like to explain that when Mr. Baxter occupied a seat at the board he expressed a desire for Mr. Darbyshire to be added also to the board; the

directors did not wish that, but told him that if he liked to resign in favour of Mr. Darbyshire at that time they would appoint him. However, this had not been done, and Mr. Baxter had resigned without nominating anyone to succeed him. After the report had been issued, the directors would be very glad to have him on the board, as he had always stood well by the company. The other gentlemen, as a matter of equal claims. However, the directors did not wish to take part in a matter, but to stand by their proposal that there should be no addition to the board. If there were to be a vote he thought that they would have to go beyond their own personal feelings, and demand a poll. There was only one other remark which he wished to make in the matter. Before they entered the room they had received the circular of a gentleman, who said he was given to understand that the directors had promised to give them a shareholders' director. That was perfectly true. The directors had been appointed under the Articles of Association, but subsequently they were very rapidly becoming shareholders' directors, which he maintained to be the more honourable position. Since they had started in the new company two of the directors (himself and Mr. Baxter) had retired, and had been re-elected by the shareholders, and he hoped that the two gentlemen mentioned on this occasion would be re-elected by the meeting as shareholders' directors; and, whether they were appointed by the shareholders, or under the Articles of Association, he did not consider it would influence them in the least. They wished to do everything to promote the interests of the company. (Hear, hear.) With these remarks he would conclude, but he would be very happy to afford any further information if it were necessary. He would now move that the report of the directors, and the statement of accounts appended thereto, should be received and adopted by the shareholders.

Mr. CHARLES S. HILL had much pleasure in seconding the motion.

The CHAIRMAN then said that in six months they would have a meeting, and that he hoped they would be in a far better position than they were now in. He really thought Mr. Smedley had justified their choice, and the trust reposed in him, and he thought that they should be very well satisfied with his operations.

A SHAREHOLDER asked whether they had not more confidence in Mr. Smedley than in the gentlemen whom he succeeded, who had involved the company in a loss of 400,000?

The CHAIRMAN said they had much more confidence in him than they had in the previous managers, he thought the board should be exonerated from all blame in the appointment of Mr. Smedley's predecessor. He came with first-class recommendations, and had been well received by the shareholders after his first management at the mines. Mrs. Hemmings thought their confidence in Mr. Smedley was well borne out by the results of his management up to the present time.

The motion for the adoption of the report was put to the meeting and carried unanimously.

The CHAIRMAN then proposed the re-election of the directors retiring by rotation. Messrs. Parke Pittar and A. L. Rawlinson, and Mr. Biscoff seemed led the motion.

In answer to a question as to whether these gentlemen were regular in their attendances, the CHAIRMAN replied in the affirmative, and said that they were being present. The motion was then carried.—Mr. PITTAR thanked the meeting for the honour conferred upon him, and Mr. Rawlinson, who was with his friends interested in the company to the amount of 4021 shares, and was, therefore, more largely interested in it than any other shareholder. As regards, therefore, attending, as he gave far too much time to the company for his own business, but he never failed in doing his duty strenuously. (Hear, hear.)

Mr. NORTON said as a vacancy had occurred in the board of directors, caused by the resignation of Mr. Baxter, he proposed that Dr. Ryan should be elected to fill the vacant part. He had been a shareholder from the commencement of the undertaking, and had never sold a share. A small circular of his in favour had not been apparently posted to the extent of 10,000 proxies; if there had not been a vacancy he would not have proposed Dr. Ryan. Mr. King seconded the motion, whereupon a discussion ensued, in the course of which an amendment was moved by Rev. J. Browne, seconded by Mr. Palmer and carried, that at the present time it was not expedient to increase the number of the board. Some discussion as to a poll followed, but the mover of the motion for the election of Dr. Ryan withdrew his motion at the express desire of that gentleman.—Mr. W. J. Mouton, the retiring auditor, was, on the motion of the Chairman, seconded by Mr. Biscoff, re-elected at a fee of 25s. per annum.

A question was then asked as to the Paven Mine, and the CHAIRMAN replied that they were anxious on the matter, and he said at the last half-yearly meeting that they need not make the last call they had not done so, but since then they had been disappointed in the returns through circumstances which he had explained. The amount of Mr. Belt for works at the Paven Mine would now be no guide to us, as he proposed to concentrate all our additional stamps there, and to conduct the operations from that point on a larger scale than had been then contemplated. The matter had not been lost sight of, and they had advised Mr. Smedley to keep it in view.

The financial position to October 31 was as follows:—Cash at the Imperial Bank, £209, 14s. 7d.; specie in transit August, 1873, 16s. 4d.; that on mine, but not shipped, September, 1873, 10s. 2d.; October, 1873, 15s. 1d.; making together, 2451s. 1s. 10d. in transit; managers' balance, 145s. 4s. 8d., and arrears on calls. Their liabilities were borrowed on the property, 2000s.; Harvey and Co. for machinery, 344s.; payments on this side for officers and men, 4s. 15s. 8d. 10d. making a little over 2400s., showing a balance of 2-5s. in their favour. (Cheers.)

On the motion of Mr. PERK, seconded by Mr. Biscoff, a cordial vote of thanks to the Chairman and directors was accorded, and the proceedings then terminated.

SOUTH TOLCARNE MINING COMPANY.

At a general meeting of shareholders, on Wednesday (Mr. DONALD FRASER in the chair), the financial statement charging up costs to Oct. 6, and including one-half cost of a 50-in. cylinder-engine and boiler (450), recently erected, showed a debit balance of £107, 17s. 10d. Capt. W. C. Vivian attended, and reported most favourably on the prospects of the mine.

Mr. S.—Since the last meeting of shareholders we have driven several fathoms west at the deep adit level on the South Condorow great tin lode. We have found, however, that in going west the tin which the lode was producing for some distance westward from the cross-course has dipped below the adit level, and as following it below we should at once have to contend with water in greater abundance than could be effectively drained by hand labour, we have suspended further operations in this important part of the mine until the drainage can be effected by the powerful steam-engine recently erected. The value of this lode in going below the adit is from 15s. to 20s. per ton. We have continued driving the deep adit level east on the gooson lode, where the results have been highly favourable. In this part of the lode is likely to be productive of rich formations of copper in belt and most probably at a little depth below the adit. The lode will also be developed by the aid of the engine now being erected. The most important operation in which we have been engaged has been the erection of the pumping-engine, the principal parts of which have been connected in their places, and we calculate on being ready to work within five weeks from the present time. To drain the engine-shaft to bottom, which is said to be 15 fms. below deep adit, will probably be effected in 45 days after the engine has been set to work, and we shall then proceed with all possible dispatch to sink the engine-shaft on the course of the gooson lode, where a trust soon to make valuable discoveries. On reaching the 25 we purpose driving north at that depth to the intersection of the South Condorow great tin lode and the other lodes (five in number) which are falling into it depth. At the points of junction we feel the greatest confidence that we shall meet with rich formations of metals, which will yield large profits. In conclusion, we have still to assure you that, judging by our experience as practical miners well acquainted with the district in which this mine is situated, that we know of no progress mine in Cornwall which offers such good prospects for giving large profits from a small outlay as South Tolcarne.—JOSEPH VIVIAN AND SONS.

GREAT LAXEY.—At a meeting of the board on Oct. 28 the directors declared a dividend of 10s. per share, payable on and after Nov. 11.

NEW PEMBROKE.—At a meeting of adventurers, held at the 25 cent house, on Tuesday (Mr. John Polkinghorne, purser, in the chair), the accounts for 16 weeks to Aug. 16 showed a debit balance of £140, 16s. 9d. A dividend of 2s. 6d. per share was made. Capt. F. Puckey and C. Merritt say—"During the last 16 weeks working we have sold upwards of 52 tons of black tin, being an increase on the previous four months of about 5 tons. The future prospects of the mine for tin are still very good, as we have a great length of good tin ground going down, and which from its dip eastward is still in advance of our bottom level."

KILLFIRE.—At the meeting, on Tuesday (Mr. J. Tregonning in the chair), the accounts for the 12 weeks showed a debit balance of £331. A dividend of 2s. per share was made. Capt. Gough stated that in consequence of the stoppage of Wheel Busy this call was necessary, as they had not had sufficient water to work the stamps, and so could not return the tin-stuff at surface. The removal of banking account from Messrs. Tweedy, Williams, and Co. to the Mine, and the appointment of the new purser, Mr. Gough, to have been simply for the convenience of the purser, and not from any disagreement with the former bankers. Captains Gough and Buckingham reported that in the coming winter months they would be able greatly to increase their returns. It was resolved that all tin samples should be tried by an independent assayer.

(For remainder of Meetings see to-day's Journal.)

GOLD OF BRITISH COLUMBIA.—An American paper states that the gold forwarded by express from the Fraser River and other gold districts in British Columbia on 15th to Sept. 1, 1873, amounted to \$23,275,914. If we add the gold allowance of one-half of that amount for the gold sent or carried by private hands during that time, we may have a total of \$44,000,000 as the gold production of British Columbia during the last 15 years. This is at the average rate of \$2,933,333 a year. As in California, Nevada, Australia, and other auriferous territories, gold can no longer be obtained in paying quantities in British Columbia by surface digging and washings. It is necessary to invest largely in expensive quartz-crushing machinery, steam engines, and steam pumps. Mining operations are now limited to about 20 companies. Of these the largest, known as the Lorne and Cariboo Mining Company, is owned and worked by San Francisco shareholders and capitalists. Several mines are owned by English capitalists. Nearly all the mines yield gold in paying quantities, and the comparatively few cases of non-paying mines are attributed rather to a deficiency of working capital on the part of the owners than to any deficiency of auriferous deposit.

THE CAPE GOLD FIELDS.—By the last Cape of Good Hope mail we learn that it was reported that the diamond fields and trade and society were assuming settled conditions, and that the diamond trade was satisfactory. The news from the Lydenburg gold fields continued to grow more and more encouraging. Reports agree in stating that from 300 to 350 diggers were at work on the alluvial, and many of them finding from ½ oz. upwards per day. A few had made very large finds. One party got 10 oz. of gold in one week, and 21 oz. in the next week. Another party got 15 oz. in three consecutive days, and 7 oz. the next day. Some parties complain of having done next to nothing. Provisions were dear, but appeared to be in sufficient supply for the present. Climate delightful.—The *Home News* of Sept. 25, says:—"We had reassuring news again from the gold fields of the Cape. We have now photographs of the nuggets—the Boma, 14½ oz., and the Adeline, 22 oz. 17½ dwts. report of another of 20 oz., and Mr. Slater assumes the manager of the Gold Company that he has seen one found during the last week weighing 30 oz., and a person here has received authentic information of one of 4 lbs. weight."



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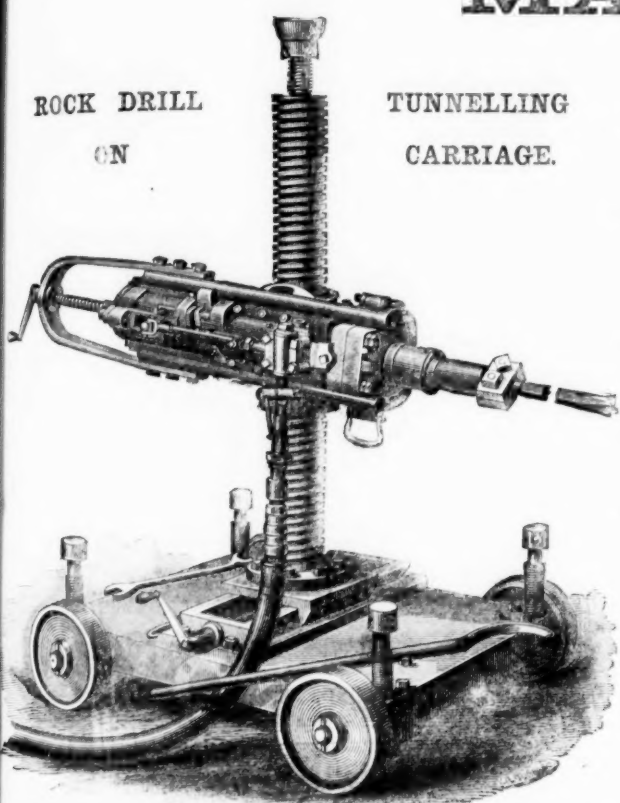
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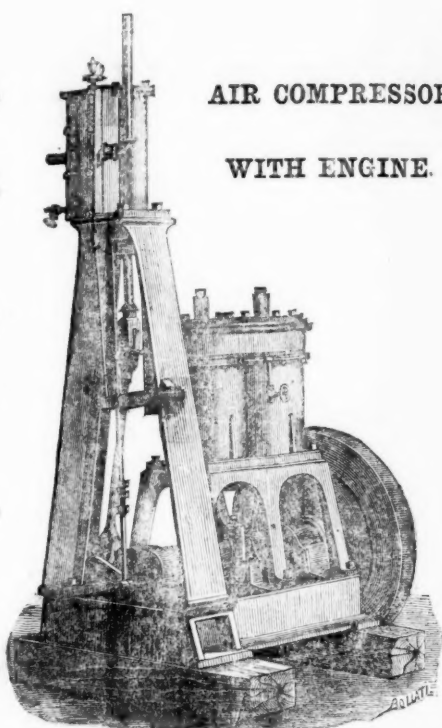
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Extract from Paper read before the British Association at Bradford, 1873, on Brain's System of Mining and Shafting Sinking at the Drybrook Iron Mines, Forest of Dean, using the "Burleigh" Rock Drilling and Air Compressing Machinery:
(Shaft 10 ft. Diameter.)

COST OF SHAFT BY HAND

During a Fortnight.

| | |
|--|----------|
| Sinkers, twelve, 12 days each, at 5s. 6d. | £39 12 0 |
| Water Fillers, three, 12 days each, at 3s. 6d. | 6 6 0 |
| Blasting powder | 1 2 0 |
| Total | £47 0 0 |

Depth Sunk 3 yards—Cost per yard . . . £15 13s. 4d.

COST OF SHAFT BY MACHINE

During a Fortnight.

| | |
|---|---------|
| Sinkers, three, 12 days each, at 5s. 9d. | £10 7 0 |
| Labourers, six, 12 days each, at 3s. 6d. | 12 12 0 |
| Engine Stokers, two, 12 days each, at 2s. 6d. | 3 0 0 |
| Dynamite, 60 lbs., at 2s. | 6 0 0 |
| Electric Fuses (Brain's) 20 per day, at say 6d. each | 6 0 0 |
| Coal for Air Compressing Engine, 12 tons small, at 10s. | 6 0 0 |
| Oil for engines | 0 5 0 |
| Total | £44 4 0 |

Depth Sunk 5 yards—Cost per yard . . . £8 16s. 9d.

THE ABOVE STATEMENT REPRESENTS WHAT IS NOW BEING DONE AT THE ABOVE MINE.

ADDITIONAL TESTIMONY.

(Copy.)

Messrs. T. BROWN & Co., 96, Newgate Street, London, E.C.

DEAR SIR,—I have much pleasure in informing you that the Rock Drill and High-pressure Boiler, with which you supplied us, are both working extremely well.

I am, yours truly,

(For the Weardale Iron and Coal Company, Limited),

J. R. CRONE.

(Copy.)

Crossfield Iron Ore Works, Crossfield Moor Row, via Carnforth, Sept. 8th, 1873.

DEAR SIR,—In reply to yours of 2nd inst., I am sorry I have not time to go into the comparison results of hand labour in sinking with that of the work done by your "Burleigh Drill." All I can say is, that for the last few months it has been giving me every satisfaction, and there is a marked difference in the progress of our sinking operations.

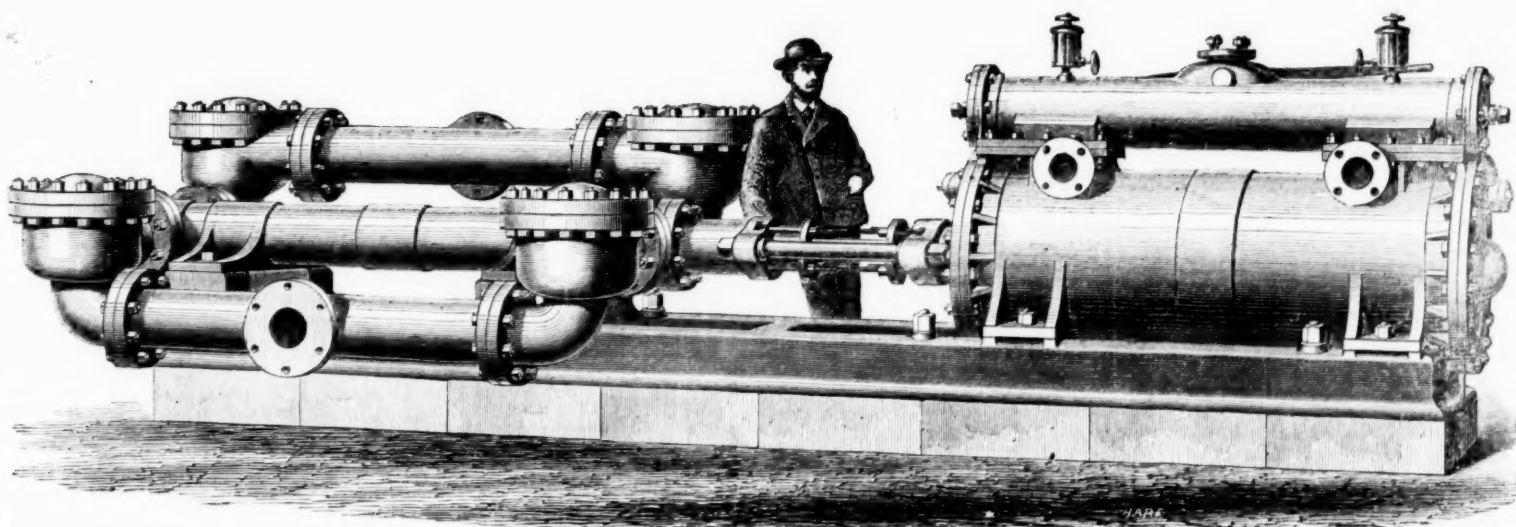
I am, yours truly,

JOHN MAIN.

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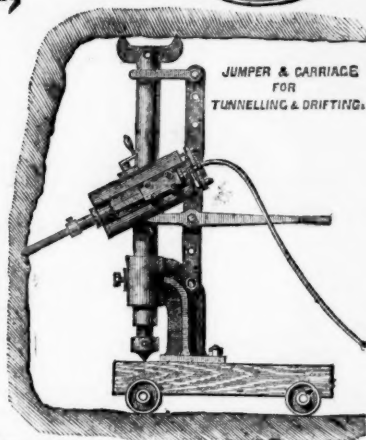
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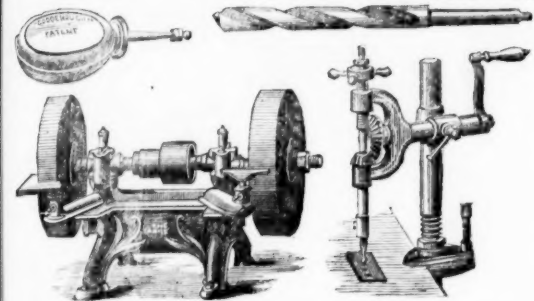
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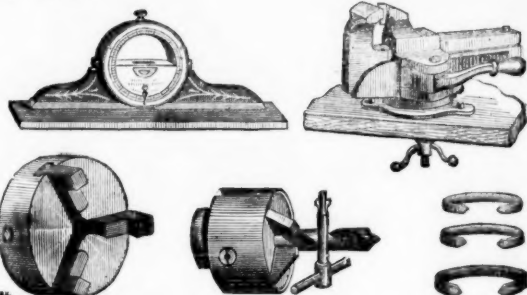


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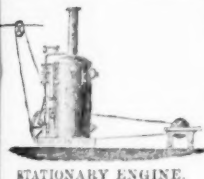
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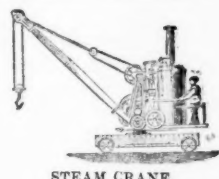
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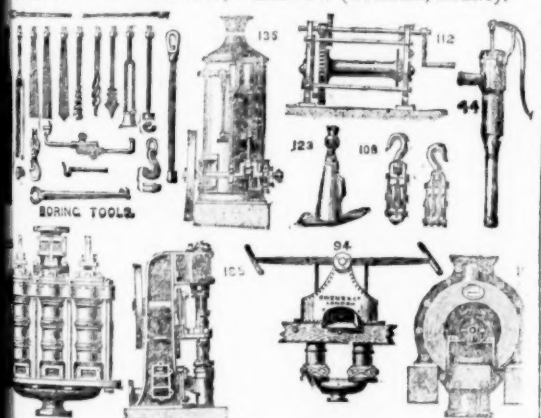


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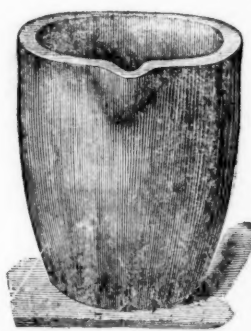
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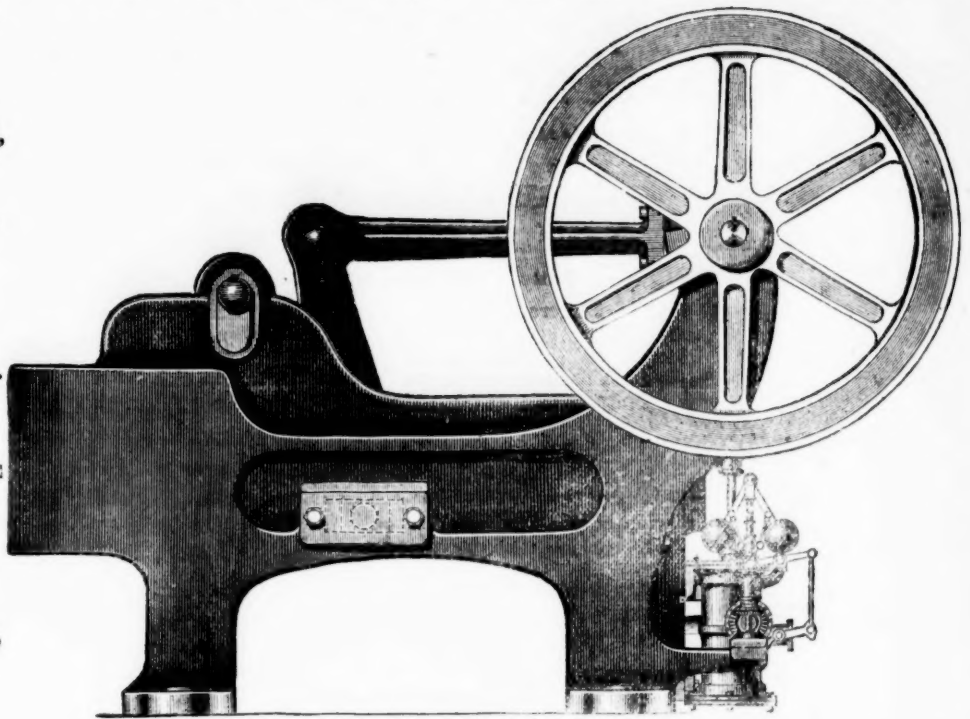
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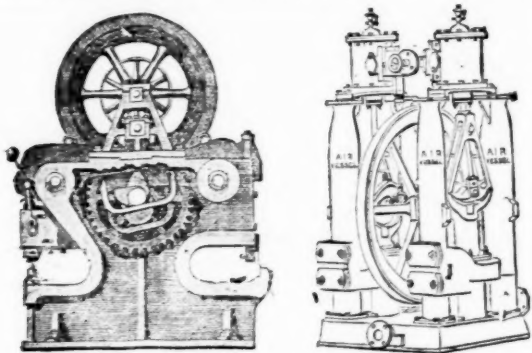
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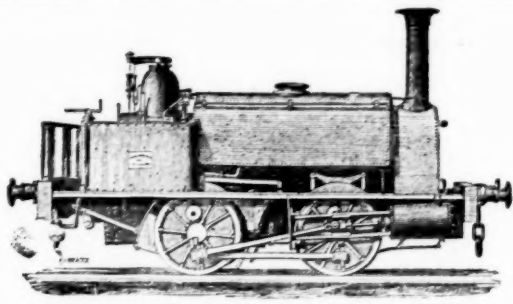


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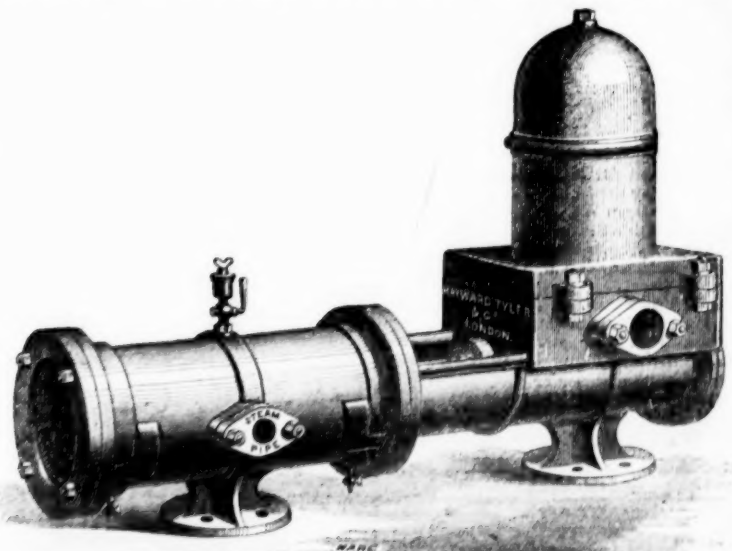
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